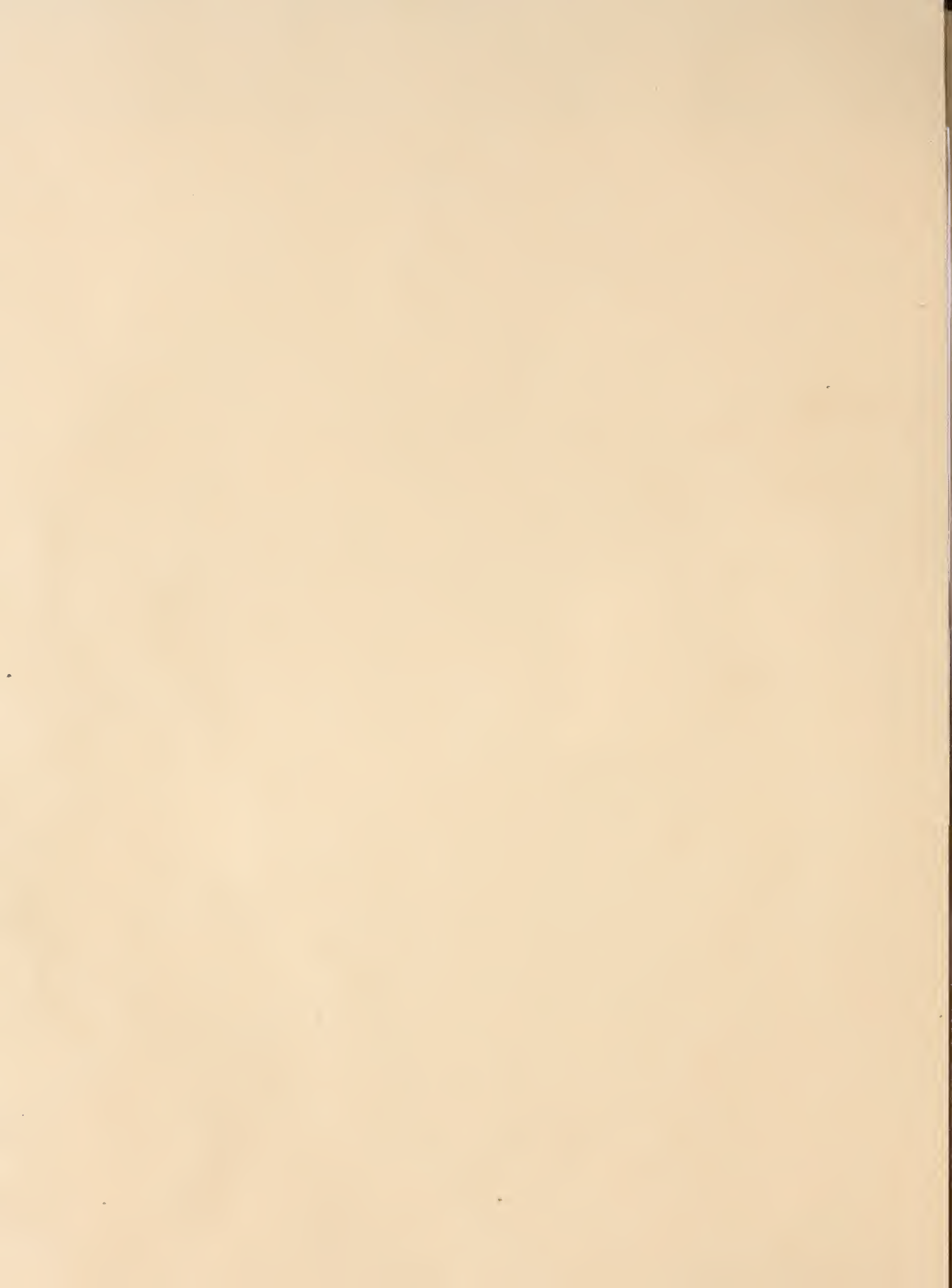


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DAILY DIGEST

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Vol. LXXIV, No. 41

Section 1

August 30, 1939

SMALLER WORLD The world is expected to have a slightly smaller supply of cotton this season than last, it was reported yesterday by the Bureau of Agricultural Economics. The 1938-39 supply was an all-time high record of 50,500,000 bales. The bureau said that although the carryover of American cotton is the largest on record, the increase this year over last in the carryover is expected to be about offset by the smaller 1939 United States crop. World carryover of foreign cotton is considerably smaller than the high record of a year ago. It seems likely that the 1939-40 foreign production may be somewhat smaller than last year's output. The bureau looks for a marked increase in United States exports of cotton in coming months, contingent upon the lessening of political tension in Europe.

MOHLER, WIGHT HONORED A Memphis report by the United Press says it was announced yesterday at the meeting of the American Veterinary Medical Association that Dr. John R. Mohler, Chief of the Bureau of Animal Industry, had been awarded the twelfth international veterinary congress prize--highest honor the veterinary profession can bestow. It was awarded in recognition of his "distinguished achievements in veterinary service in the United States and foreign countries." Dr. A. E. Wight, Chief of the Tuberculosis Eradication Division of the Bureau, was elected president of the association. He will take office at the 1940 convention in Washington next August.

DISTRIBUTION RESEARCH Establishment of a liberally endowed research institute in the field of distribution under independent auspices and the immediate repeal of anti-chain laws and other legislation "designed to preserve or destroy some special group in the distribution structure" were highlights of a program for increased distributive efficiency, recommended in the final report of the Twentieth Century Fund's distribution committee, published yesterday. Unanimous agreement on the recommendations was shown by the committee of nine national authorities concerned with distribution. The recommendations also urged a study of the feasibility of charging different retail prices for a single article, depending upon the cash, credit or service features connected with its sale; expansion of consumer education and the further organization of consumer cooperation. (New York Times.)

Softwood Grading Effective September 1, grade-marking of Northeastern softwoods will go into effect under the sponsorship of the Northeastern Lumber Manufacturers Association, R. E. Broderick, secretary, has announced. The species to be marked are Norway pine, eastern spruce, northern white pine and eastern hemlock. Grade marking, according to the association, amounts to a certification of the product. (Press.)

Low-Cost Homes Aid A simplified long-term plan to finance the construction of small homes -- costing not more than \$2,500-- which it is estimated families with incomes ranging from \$900 to \$1,500 annually will be able to take advantage of, has been announced by Stewart McDonald, Federal housing administrator. The new plan will require the purchasers to make "down payments" as low as 5 percent. Under the plan, effective September 1, home builders may have 15 years to pay off their loans. Excluding taxes and fire insurance, monthly payments on a \$2,000 home would be only \$17. The plan is designed primarily to aid families in the lower income brackets, who heretofore have been unable to take advantage of F. H. A. home financing facilities. "It should be clearly understood," said Administrator McDonald, "that this plan is intended as a supplement and not as a substitute for the home ownership program in operation during the last five years under the National Housing Act..." (Press.)

Research in Steel The steel industry this year will spend about \$10,000,000 for research into methods of improving its products and manufacturing processes, and to develop new products, according to information furnished to the American Iron and Steel Institute by companies in the industry. Nearly 2,550 chemists, metallurgists, physicists and other scientists devote all their time to research in the industry's laboratories, while about 1,300 others devote a substantial part of their time to research activities. About 33 percent of the steel industry's annual expenditures for research is devoted to improving the quality of products, and 19 percent is spent to improve manufacturing methods. (Press.)

FCA Aids 71,000 Farms Farmers bought more than 71,000 farms with financial assistance of the Farm Credit Administration in the approximate period of four years since the passage of the Farm Credit Act of 1935, the FCA has announced. To assist in farm purchases the twelve Federal Land Banks and the Land Bank Commissioner, acting for the Federal Farm Mortgage Corporation, extended credits amounting to \$181,835,900 from Oct. 1, 1935, through June 30, 1939, according to the statement. The figures do not include farms sold for cash by the Federal Land Banks and the Commissioner. Of the total number of purchases financed, loans for the purchase of farms represented 31 percent; farms sold on credit terms by the Federal Land Banks, 62 percent, and farms sold on credit terms by the Federal Farm Mortgage Corporation, 7 percent. The average amount of credit extended for the purchase of a farm was \$3,360, whereas that extended for farms sold on mortgage and contract terms was \$2,156. (New York Times.)

City Milk Statistics

The American Produce Review (August 23) comments the fact that the Agricultural Marketing Service will compile more extensive information on city milk consumption, and says: "It is understood that the program calls for the enlargement of the statistical service on total use in those centers where records already are maintained by the department, and its extension to other areas from which less complete data have formerly been obtained...This development of a more accurate gauge of urban consumption of fluid milk and cream will be a welcome and valuable addition to the field of statistical compilation bearing on the dairy industry. Of especial interest will be the opportunity, through the availability of figures secured in a relatively uniform manner, to make consumption record comparisons as between different localities where varying marketing programs and sales efforts are in effect."

Trucker Bull Trade

The Farmer (St. Paul, August 26) commenting editorially on the trucker bull trade, says: "A speculator goes about the country buying up bulls presumably for the market -- scrubs, low grades and castoffs from purebred herds, anything that will not cost much money. Or the trucker may choose animals sent to market for slaughter if they look as though they might be able to put on some weight gains. After gathering the bulls, he sets out to peddle them to farmers. Each farmer keeps a bull from one to two years and has the service of the animal for his cow herd. In return the trucker gets the added weight that the farmer puts on at no cost for feed to him. The practice would not be harmful if the bulls so leased were animals of good breeding. Ordinarily they are not, and in any case it is rarely possible to find out anything about them...Veterinarians believe that the disease problem is made much more difficult by the practice, particularly because of the likelihood of spreading Bang's disease. The extent to which bull leasing is being practiced is amazing. In one southern Minnesota county alone there are 400 bulls leased out by one man, and two others have 200 bulls each so distributed. The same thing is going on in Wisconsin..."

Aerobiology Experiments

Scientists in airplanes soon will start the first thorough nation-wide study of the country's pollen grains which cause hay fever and some kinds of asthma. The study, which will extend from the Gulf of Mexico to Alaska, across the Atlantic to England and across the Pacific to China, is an effort to find how much pollen is carried in the air, how high it is lifted by wind currents and how far it can travel. O.C. Durham, chief botanist of a Chicago laboratory, is carrying on the work in which two prominent scientists lost their lives a year ago. Dr. Fred C. Meier of the Department of Agriculture and Dr. Earl B. McKinley, dean of the George Washington Medical School, died in the

crash of an airplane in the South Pacific while making aerial studies of the distribution of pollen, spores and disease germs. Dr. Meier had made many flights in the study of the new branch of science, which he termed "aerobiology." Dr. Durham plans to fly about 10,000 miles during the coming months to expose at various altitudes microscope slides covered with oil to collect pollen and germs. The method is one developed by Dr. Meier. (A.P.)

Bull Studs **Successful Farming** (September) contains a short account of the Idaho bull stud plan, by Ivan H. Loughary. The plan, he says, "provides for the delivery of a stud bull for service to the cow-owner's farm by truck or trailer. Cow-owners sign an agreement with the bull-stud operator to use stud-bull service on a specified number of cows, indicating the breed desired...One bull-stud operator can handle six or more bulls, which will provide him a full-time occupation. The Idaho bull studs have 75 to 125 cows per bull...The investment per bull is about \$300...The agreements require that a prophylactic be administered to the bull, that the feet of the bull and the trailer be disinfected before leaving the premises of the farmer whose cows have been serviced, in order to prevent the bull from becoming infected and diseases spread. Two years' experience in bull-stud operation in Idaho indicates that there has been no disease spread by the stud bulls where precautions have been followed rigidly...The bull-stud plan of supplying high-quality bull service seems to offer an excellent solution to a problem which affects the greatest number of cows of the nation — those of the small-herd owner."

Energy Resources Placing of a large share of the nation's energy burden on lower grade fuels and water power would be a long step towards conservation of energy resources, the National Resources Committee reported in a study released this week. The report also suggested promotion of greater efficiency in fuel production and greater economy in the use of fuels. The report, discussing all the nation's energy resources, was prepared by a special energy resources committee of the National Resources Committee at the request of the President. Specifically, the report proposed: creation of a federal oil conservation board to administer federal interest in the oil and gas industry; federal regulation of bituminous coal; and multiple purpose development of water resources in view of the pressing character of problems related to flood control, public water supply, stream pollution, irrigation and navigation. In order to carry out this program, the report suggested organization of an advisory planning group for energy resources, to be a part of a national planning agency. (Wall Street Journal.)

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Vol. LXXIV, No. 42

Section 1

August 31, 1939

WEATHER AND CROPS

The Weather Bureau reported yesterday that in the Northeastern States, where drought previously was widespread, conditions are now fairly favorable, except in much of New York. Late crops show general improvement in Maryland, Pennsylvania, New Jersey and New England. However, in New York the past week was generally warm and dry, with only a few local showers, with drought again serious in many places and consequent suffering of late crops. Moderate temperatures and soil moisture mostly sufficient for current needs made conditions largely favorable east of the Great Plains. In some eastern Ohio Valley sections, especially in Ohio, rain is needed, with pastures drying up and late crops suffering. In the Southeast persistent rains have kept many localities too wet.

SCIENCE CONGRESS

Scientists of all nations are banded together for peace, declared the president of the British Association for the Advancement of Science, Sir Albert Seward, botanist, in his address opening the organization's congress last night at Dundee, Scotland. "There is a bond of fellowship among scientists of all nations," he said. A new division of social and international relations makes its first appearance on the program this year, reporting the progress of inquiries into the economic requirements of nations and the effects of science on industry and labor displacement, nutrition and agriculture and other issues. Sir Isaiah Bowman, president of Johns Hopkins University, will deliver the exchange lecture between the American and British Associations, on "Science and Social Pioneering." (New York Times.)

STORAGE EGGS AT NEW LOW

Refrigerator eggs for October delivery hit an all-time low of 16 cents a dozen on the Chicago mercantile exchange yesterday under general liquidation and stop-loss selling, says an Associated Press report. The low point was a fall of .75 of a cent but the market rallied and closed .30 of a cent lower at 16.45.

VEGETABLE SITUATION

Mid-August market prices of potatoes and truck crops generally averaged somewhat lower than a month earlier, reports the Bureau of Agricultural Economics. Prices of potatoes averaged slightly higher than in August last year, but most truck crops were lower.

Conservation "One of the reasons frequently advanced for a
Departments federal department of conservation is that many of
 the states have adopted this form of organization in
dealing with state resources," says an editorial in *American Forests*
(September). "Of the forty odd states now having forestry organiza-
tions, seventeen are organized with conservation departments. Four-
teen have separate forestry boards or commissions and the remainder
function through other state departments or agencies...The experi-
ences of the states have been brief and are still in an experimental
stage. It would seem much more logical, therefore, particularly in
considering the type of organization best adapted to national manage-
ment of forests and related resources, to turn to those countries
which have passed through the experimental stages. In most of Europe,
forestry long ago was accepted as a problem of growing plant and ani-
mal products from the soil, with the result that today forestry is a
part of the departments of agriculture in Norway, Sweden, Finland,
Denmark, Poland, France, Italy, Czechoslovakia, Belgium, Estonia,
Greece, Irish Free State, Latvia, Lithuania, Spain and Turkey. Out-
side Europe the agricultural pattern of organization also prevails,
including such countries as Argentina, Brazil, Venezuela, Union of
South Africa, the Philippines, China, Japan, Netherlands, East Indies
and Turkey. Notable exceptions are Switzerland, Germany, Canada and
Russia..."

Patents T. Swann Harding, of the Office of Information,
in Science writes in *Common Sense* (September) on "Science for
 Whom?" "Every so often there is discussion of the
patenting of scientific discoveries both to protect the discoverer
and the public," he says in part. "In a sense such patents are un-
fair. For all scientific discoveries, insulin or vitamin D for
instance, are made gradually. The final achievement is based upon
work in many countries by many workers. The patent is unfair in the
sense that it gives those who happened to make the last push over
the top much more credit than earlier and perhaps more important
workers...The profit motive is so cleverly woven into the legal and
economic structure of our society that the creators are impoverished,
those who actually need the goods get them at high cost, and the end
result is shameful prostitution of scientific knowledge. Pseudo-
science in advertising has actually gone so far that scrupulously
decent manufacturers hesitate to use legitimate science in advertis-
ing matter even when this is warranted...Set up a board composed of
chemists, bacteriologists, pharmacists, physicians, economists and
other qualified specialists as needed. Give them permanent positions
with civil service status after they have passed proper examinations.
Let them decide the technical questions upon which they have expert
knowledge...It is necessary that we have a National Institute of

Science with appropriate branches located as necessity dictates. It should be staffed with civil service employees of the highest competence... True some steps have been made in the right direction. The Securities Exchange Commission demands certain information regarding stock issues before they are marketed. The Food and Drug Administration and the Federal Trade Commission formulate certain regulations as to the proper labeling and advertising of foods, drugs and cosmetics. But we can never have effective control of abuses and full implementation of science until we go beyond this and establish the control over the initial steps in the process. We must see to it that scientific discoveries are protected and scientific discoverers sufficiently rewarded to encourage them..."

Colorado Fire Protection With the signing of a forest fire protection agreement by the Department and the State of Colorado, the number of States cooperating with the Federal government for the control of forest fires under the Clarke-McNary Act has been brought to 41 States and Hawaii, according to the Forest Service. The seven States not participating are Iowa, Kansas, Nebraska, North Dakota, Utah, Wyoming and Arizona. The first four are in the Great Plains Region and have little forest land. Forest lands of the remaining three are mostly in National Forests. State and Federal reports reveal that 94 percent of all acreage burned in 1937 in Colorado was on unprotected forest areas and more than 11 percent of all unprotected forest land was burned over. The cost of protecting the entire Colorado area of 6,021,000 acres will be about \$120,000 annually, or slightly under two cents per acre. This will be shared by the State and Federal governments. The Clarke-McNary Act authorizes the yearly expenditure of \$2,500,000 for forest fire protection, on a matching basis with the States. In 1938, the Federal government spent for this purpose about \$2,000,000 against a total State expenditure of about \$7,000,000. The Federal appropriation for 1939 is \$2,200,000.

Naval Stores Conservation "The 1939 conservation agreement between the Forest Service and the American Turpentine Farmers Association contains, for the first time in history, provisions looking toward a substantial reduction in the production of turpentine and rosin," says Marvin Cox in *Southern Agriculturalist* (September). "This move for curtailment by the turpentine farmers and the government, dictated by distress conditions throughout the naval stores belt, contrasts sharply with the dire predictions of a generation ago that the supply of gun naval stores would soon become entirely exhausted... With the advent of the present Federal administration, with its programs of aid to agriculture, a more widespread adoption of conservation practices resulted because of the benefits accruing to the participating operators. The Federal conservation

program prohibited participants from cupping trees less than nine inches in diameter, four and one-half feet from the ground. A vast majority of the turpentine farmers -- more than 79 percent in 1938 -- took part in it...The naval stores industry that reaches from the Carolina pinelands down through south Georgia, northern Florida and around the Gulf States to Texas, and that was supposed to have been doomed years ago, due to practical conservation now has a limitless supply of pines to meet the demand for years to come."

Science of Tomorrow Robert A. Millikan writes in the Scientific Monthly (September) on "Science and the World of Tomorrow." "Fifty years from now," he says, "the world will look to us from the point of view of power, not so very different from what it looks now. Air travel will of course have increased, but the great bulk of the freight will go as now by surface vehicles or by steamships propelled in the essential particulars much as they are to-day. The art of communications, too, is already a pretty well perfected art, and though it may be considerably cheaper than now, more messages being simultaneously carried over a given cable, so far as the techniques used are concerned I do not expect any very radical or startling change. Among the natural sciences biology has the opportunity to do the big new things so far as their immediate effect on human living is concerned, and I have no doubt that in the field of public health the control of disease, the cessation of the continuous reproduction of the unfit, etc., big advances will be made...The most burning and most uncertain situation about the future has to do with social and political matters, and it should be remembered that all the foregoing forecast was based on the assumption that our present civilization would not be destroyed by man's present or prospective international wickedness, stupidity and folly. I know of no direct way in which science can prevent that...Indirectly, however, the sciences of explosives and...poison gases, of aerodynamics, of communications with its corollary, the rapid spread of knowledge among the people, are doing the work..."

Fluorine in Water Development of two types of bone filters which remove fluoride from drinking water is reported by Dr. H. V. Smith, an Arizona College of Agriculture scientist. Mottled tooth enamel, common in many parts of the United States, is due to excessive fluoride in drinking water. One type of filter, designed to give three months' to a year's service without a change of the filter cartridge, is adapted to drinking fountains, while the other, a pressure type, is suitable for schools or homes desiring to treat their entire water supply, Mr. Smith said. Field tests of the units, conducted during the past year, have been satisfactory, Mr. Smith declared. (Science Service.)

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Section 1

September 1, 1939

TENANT PROGRAM

The Farm Security Administration reported today that during the first two years under the Bankhead-Jones farm tenant act it had made 6,181 loans to tenants for the purchase of farms. The loans aggregated \$33,339,684, or an average of \$5,394 per farmer. Farms acquired by these tenant borrowers averaged 134 acres each, but the average varied greatly according to the kinds of farming. Except for Rhode Island, where only one loan was made, the lowest average in continental United States was 43 acres in California, where irrigation makes small farms profitable. The highest was 520 in South Dakota, where range farming prevails.

During the second year of the program, ending last June 30, the loans ran a little higher, the farms were somewhat bigger, and more improvements were made, than during the first year. The 4,341 loans during the second year aggregated \$24,140,675, or an average of \$5,561. The average acreage was 136. The 1,840 loans during the first year aggregated \$9,199,008, or an average of \$4,999. The average farm bought was 130 acres. First year borrowers spent \$1,626,733 for improvements to the farms they bought, or about 18 percent of their loans. Second year borrowers spent \$5,778,268, or about 24 percent of their loans for improvements.

EXPORT-IMPORT BANK LOANS

The Export-Import Bank is in a position to finance American exports of surplus commodities to Europe, and the Reconstruction Finance Corporation "has plenty of unused credit" with which to finance industrial production in this country, should the occasion arise as a result of the war emergency, Jesse H. Jones, Federal Lending Administrator, said yesterday. The administrator added, however, that he was confident that ample domestic industrial credit could be supplied through private channels. Mr. Jones made his statement after a conference with President Roosevelt. The Johnson act prohibiting government credits to foreign countries in default on their obligations to the United States did not apply, he said, to the RFC or the Export-Import Bank. (New York Times.)

N.Y. MILK PRODUCTION

Governor Lehman of New York urged farmers yesterday to reduce milk production and turn to other phases of agriculture as a method of limiting "the destructive possibilities of surplus" in the State's \$2,000,000,000 dairy industry. He spoke at the New York State Fair. (New York Times.)

Quick-Frozen Poultry The U. S. Egg and Poultry Magazine (September) contains an article on quick-frozen, ready-to-cook poultry, by Rob R. Slocum, of the Bureau of Agricultural Economics (reprinted from Western Frozen Foods). Discussing the advantages of full-drawn, quick-frozen poultry, he says: "One of the economic advantages is a saving in weight of approximately 25 to 30 percent as the result of the removal of head, feet and entrails. This enables a shipper to pack the same number of birds in a package smaller than that formerly used. Because of the lesser weight, there is also a saving in shipping charges and in storage charges. Another economic advantage is the lowering of the costs of drawing the poultry. This is made possible by concentrating the work at points where considerable volume is handled and usually at country points where labor costs are lower. Poultry prepared in packing plants at country concentration points has definite sanitary advantages. The facilities that it is practicable to provide at such points are superior for doing a good job of drawing, and the fact that the poultry is quick-frozen checks immediately any tendency toward deterioration. At plants where poultry is prepared under government inspection there are rigid requirements with reference to sanitary equipment and methods of operation that further insure the sanitary condition of the quick-frozen inspected product. Wrapping of birds individually protects them against further handling and therefore improves the sanitary conditions under which they are merchandised. From the standpoint of sales appeal and acceptability to consumers may be mentioned the fact that a carcass wrapped individually in cellophane constitutes package goods. Undoubtedly, particularly as time goes on, the merchandising of full-drawn poultry as package goods will extend the outlets through which such poultry may be retailed and should therefore increase poultry consumption. Moreover the more attractive appearance of poultry so wrapped unquestionably makes a greater appeal to purchasers..."

Grassroots Research Dr. Frank Thone, in Science Today (September 1) says a comprehensive grassroots survey has recently been completed by Drs. S. B. Shively and J. E. Weaver of the University of Nebraska. "These two botanists and their associates," he says, "sought out still-unbroken stretches of native prairie of many different types, ranging from the tall, rank big bluestem to the curling, ground-hugging buffalo grass. They removed hundreds of sample sods, each half a square meter in area and ten centimeters (four inches) deep. They carefully washed out the soil, carefully determined volume and weight of the mass of roots and underground stems or rhizomes. Results of this grassroots botanizing are astonishing. The root and rhizome crop of typical grasslands in West and Midwest can be measured in tons per acre. Total lengths add up into miles per square foot of sod. Yields vary with rainfall, just as

top yields vary. Thus, a series of 27 samples of big bluestem sod, averaged out at 4.54 dry-weight tons per acre for the western Iowa area, 3.54 tons per acre in the country around Lincoln, Neb. and 3.17 in the drier region southwest of Lincoln. This falling curve closely follows the falling curve of annual precipitation for the same areas. Other species showed a similar decline in yield from east to west..."

Grain Dust Explosions Increased use of motortrucks in hauling grain to terminal elevators introduces a dust-explosion hazard, in the opinion of Dr. David J. Price, in charge of the Chemical Engineering Division of the Department. Previously, most grain was unloaded at terminal points from railroad cars and water barges. To empty a truck at the elevator, it is usually elevated in front so that the load of grain will run out the back into a receiving pit onto the conveyor belt that carries the grain to the bins. At such a sharp angle gasoline is likely to leak down onto the conveyor, increasing chances of an explosion and fire. Too, the gasoline may come in contact with a hot exhaust pipe from the truck, or when the motor is started there is possibility that it may backfire. Dr. Price plans to investigate further truck-unloading facilities with a view to developing methods that will be less hazardous than those used at present.

New Manure Spreaders "Speed has caught up with the manure spreader," says the Farm Journal and Farmer's Wife (September). "Rubber tires and tractor operation are reasons why..."

New this month is a two-wheel tractor spreader designed exclusively for rubber tires. Ingot iron is used for sides and front. Spreader controls are operated from the tractor seat. Conveyor drive is operated by cam arms keyed to rear axle shaft. When not attached to the tractor, the spreader's front end is held at correct hitching height by means of a semi-automatic stand. To hitch up, the tractor is backed into the hitch and a king pin is dropped by control near the tractor seat. By means of a trip rope, the stand is folded up when the tractor is in use. The wheels take 18-inch tires... Built for livestock farms where manure is a real crop, is another tractor spreader equipped with rubber tires. The tractor, through power take-off, supplies power to drive the beaters. Rear spreader wheels drive the spreader feed, so the volume of manure spread per acre will remain constant, whether the tractor is traveling fast or slow..."

Picking Bucket A recently marketed picking bucket for orchard fruit has a heavy canvas bottom which can be easily loosened so that the fruit rolls out into the boxes without injury. One side of the bucket is curved to fit the body of the picker and the top opening is padded. There are adjustable shoulder straps and the bucket bottom is protected by leather when the bucket is rested against a limb or box. (Country Home, Sept.)

Feeding
Chickens

Harry W. Titus, of the National Agricultural Research Center, discusses systems of feeding chickens in Country Gentleman (September). "In a recent bulletin from the Wyoming Experiment Station," he says, "M. O. North reports the results of a three-year experiment in which all-mash feeding of laying hens was compared with the mash-grain system and four modifications of it. In one modification one third of the grain was hand-fed in the morning and two thirds in the evening. In another all the grain was hand-fed in the evening, and in a third all the grain was hand-fed in the morning. In the fourth modification the chickens had free access to the grain only in the afternoon. Egg production of all six groups of these hens ranged from 42.7 to 46.6 per cent, and the cost per dozen eggs from 10.7 to 12.2 cents. The all-mash system was the best from the standpoint of both egg production and the cost of a dozen eggs, but the differences in favor of this system were comparatively small in four of the five comparisons. Furthermore, none of the six methods of feeding had any significant effect on egg weight, mortality, gain in live weight, fertility or hatchability. Many of North's findings are in general agreement with those of other investigators and suggest that the system of feeding is of relatively little importance so long as it supplies all the essential nutrients in adequate quantities...Undoubtedly, of the two systems, all-mash feeding is simpler and involves less labor; but for the skilled feeder the mash-grain system is the more flexible."

1939 Land-Use
Legislation

Melville C. Williams and Harold L. Price review state land-use legislation for 1939, in Land Policy Review (August). "Laws more or less along the lines of the standard state law (soil conservation districts law, developed in 1936 by the Department) were enacted in 10 States: Alabama, Idaho, Iowa, Montana, Oregon, Tennessee, Texas, Vermont, Washington, and West Virginia, making a total of 36 States which have enacted soil conservation districts laws...In addition, several States have enacted legislation amending soil conservation districts laws...An interesting departure is the amendment of the New Mexico act of 1937 to provide for the establishment of a 'range land zone' and a 'farm land zone' in each district which contains both grazing and cultivated land...A rural zoning enabling act which relates to both county planning and zoning was adopted in Colorado...The Minnesota legislature adopted a zoning enabling act, operative in counties in which there is State or Federal forest or a State conservation area...A Tennessee law authorizes counties with population of between 159,000 and 200,000 that are located within a planning region designated by the State planning commission, to zone their unincorporated areas and to regulate the use of land...An unusual act was adopted in North Dakota to enable counties with less than 4,000 population to become unorganized...Indiana and Ohio have adopted similar enactments which enable them to select and acquire chronically tax-delinquent lands suitable for conservation purposes...The Montana grazing laws were completely rewritten by the legislature...Arkansas now provides that State owned lands may be classified by the land use committee of the State planning board into three groups...Laws of North Dakota and Montana relate to leasing county tax deed lands for grazing..."

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Section 1

September 5, 1939

FARM WAR COUNCIL

The Department of Agriculture appointed an Agriculture Advisory Council yesterday, composed of non-government members, to assist in formulating policies for production, distribution and marketing of foodstuffs under conditions brought about or expected as the result of the European war. Secretary Wallace coupled the announcement with a statement that "there are now abundant food and fiber supplies in our country." However, there are other problems, he added, which must be solved, but "can be solved without resort to the methods of dictators."

Secretary Wallace added that "by working together, farmers, business men and government can make these supplies available at prices fair to consumers and producers alike. We are much better prepared to do this than we were at the outbreak of the World War. And it also will be much easier to make the adjustments necessary to preserve peace.

"New and difficult problems will confront us, but they can be solved without resort to the methods of dictators. We are going to work together to solve them and we are going to do it within the framework of our economic democracy. We can, if we will counsel realistically and democratically together, avoid the economic turmoil which produced the regimentation that is now found almost everywhere in Europe." New York Times.)

WHEAT ACREAGE ALLOTMENTS

The European crisis does not warrant any change in the 1940 wheat acreage allotments, R. M. Evans, administrator of the Agricultural Adjustment Administration, has declared. He said: "The 62 million acre wheat allotment for 1940 is 7 million acres larger than this year's allotment and much larger than the harvested acreage in 1914. World granaries are overflowing with the largest wheat supply in history. Prospective demand in neither the foreign nor domestic market justifies American wheat farmers in expanding their acreage now. The safest thing for all farmers to do is to stay with the AAA farm program. It provides the machinery for adjusting the production of major crops as quickly as necessary to any changes in demand which may occur. At the same time the AAA continues to assure improved farm incomes, abundant food supplies for consumers and a sound soil-conserving system of agriculture."

Crested
Wheatgrass "When homesteaders in Montana began to abandon the poorer tracts of land, there was much concern about what was to become of the land," says an editorial in the Great Falls Tribune (August 23). "At the same time here and there, with the encouragement of the extension service and experiment stations, farmers were trying out crested wheatgrass plots. This forage plant seemed to like Montana conditions but the seed was expensive and many ranchers and farmers had hard luck in their first attempts to get the grass started. The soil conservation movement, however, in recent years gave a great impetus to the regrassing program and now private individuals as well as government projects are expanding the acreage of this particular grass so rapidly that seed prices have been hit hard by the increased supply. In the big government land purchase program in northern Montana the managers of the conservation project began planting the grass on abandoned grain fields in 1937. These lands were bought from the dry land farmers by the government and returned to permanent range use. Five thousand acres were seeded the first year. By the end of 1938, 57,000 acres had been planted to the grass."

Hybrid
Testing "The general acceptance of corn hybrids throughout the Cornbelt has led to an industrial development in the production of hybrid seedcorn," says John M. Airy, in Successful Farming (September). "The resulting number of hybrids on the market, the intense sales competition, the newness of hybrid corn to many farmers, and lack of a better understanding of corn hybrids have resulted in confusion and uncertainty when selecting the variety to buy...County agents, county club agents, agriculture instructors, and 4-H Club leaders are sponsoring small yield tests of the various hybrids offered for sale locally. These tests are generally machine-planted, strip-test plots; some of the more interested groups sponsor hand-planted, replicated plots. State crop-improvement associations, in co-operation with the state agricultural experiment stations, are conducting extensive hand-planted, random-arranged, replicated-yield test plots of commercial and experimental hybrids. Entry to the test is voluntary, and a fee is charged for each entry. In addition to farm comparisons, local tests, and state tests, the better corn-breeders are conducting extensive tests, similar to the state yield tests, to discover high-yielding experimental hybrids and to measure the comparative performance ability of their own developed hybrids...The purchaser of hybrid seed corn for his 1940 crop will largely base his choice on comparisons familiar to him in 1939. Results of previous years are also available to those who desire a more thorough and careful study..."

Economic
Activity

In the leading article in September Scientific Monthly Harold G. Moulton, president of the Brookings Institution, writes on "The Chemical Industry and the Economic System." "Economic activity -- the use of our labor power and our capital equipment -- has always been directed to a double purpose," he says in part, "the production of goods to care for the needs of increasing numbers of people, and the production of increasing quantities of goods to meet the growing demands of the existing population. Stating the matter in other terms, we not only seek to produce enough to provide our children with necessities, but we hope to enable them, as well as ourselves, to enjoy higher standards of living than were attained by our predecessors. We may translate these general statements into specific terms by reference again to what actually occurred in the great era of expansion from 1900 to 1929. We did, it is true, devote our energies to the production of primary goods and services for a steadily expanding total population, but at the same time we were constantly producing more for the already existing population. In the course of this thirty-year period as a whole, per capita income rose almost 40 percent. Is it not obvious that a cessation of population growth does not render it necessary for us to refrain henceforth from producing more and yet more for the existing population?...The character of our productive output might differ in considerable degree, but the total output need not be affected -- that is, not until our desires are fully satiated. Studies indicate that we need have no concern on this score until the national income is at least three times its present level. We have been accustomed to thinking of expansion in terms of frontiers, geographic areas and numbers of people -- that is, in extensive rather than intensive terms. Hence we are prone to overlook the vast potential markets that may be opened on the intensive frontier of development...There must be constantly increasing efficiency in production on the part of both labor and capital. Only by everlastingly improving technical processes and lowering the costs of production can we obtain progressively higher standards of living..."

Ga. Cotton
Bagging

"The AAA program to subsidize the manufacture of 1,000,000 patterns of cotton bagging for wrapping cotton in the South as an experiment has been very successful in Georgia," says C. G. Garner in Southern Agriculturist (Sept.). "A recent survey by the author of this article shows that the Sea Island ginner in South Georgia were well pleased with cotton bagging. All Sea Island cotton in Georgia and Florida was wrapped in cotton this year...The appearance was very neat and usually much more so than jute. Since most of the Sea Island cotton is exported it was especially desirable that the bale be wrapped entirely...While the new bagging was wide enough easily to fasten under the end ties, it also had a breaking strength of 150 pounds one way and 300 pounds the other. This makes it

stand the hooks much better...One cotton mill claims that a mill saves 10 pounds of cotton instead of seven and one-half by using this cotton bagging instead of two-pound jute. This mill claims that the cotton can be swept from the cotton bagging and put direct into the plant with the remainder of the bale..."

Swine-Type Studies

C.D.L., in Successful Farming (September) in an item on hog types, says: "The results of a recent study by the U. S. Department of Agriculture are of interest. A total of 166 hogs, all of one breed, and representing when ready for slaughter 3 distinct type groups -- large intermediate, and small -- were involved in the study. The range in weight when slaughtered was very narrow and ran from 215 to 234 pounds. The carcasses of these hogs showed that as type decreased from large to small there were marked increases in the thickness of backfat and in plumpness of ham. The backfat in the intermediate-type group was 19 percent thicker than in the large-type group, and nearly 26 percent thicker in the small-type group than in the intermediate. Likewise the plumpness of ham increased nearly 13 percent between the first 2 groups, and about 23 percent in the small type as compared with the intermediate type. The dressing percentages of the large and intermediate type hogs were practically the same and approximated 74 percent, while that of the small type was 78 percent. Major products which increased in percentages of the carcass as type went from large to small were bacon and fat, while cuts which decreased in percentage, accompanying the decrease in size, were ham, shoulder, and loin..."

Rio Grande Irrigation

The largest concrete canal-lining job ever undertaken in the United States is being rushed to completion so 70,000 acres of the fertile Rio Grande Valley may have water, says a United Press report in the Chicago News (August 26). PWA Regional Director Bull announced that first regular deliveries of water would begin about Sept. 1. The irrigation project will be one of the most complete in the nation when it is finished. Between 20,000 and 25,000 acres will be supplied with water in September and additional acreage will be watered from time to time until the entire 70,000 acres of its scope will be fed, beginning December 31. The irrigation will enable this area to produce three or four crops a year. This is a principal winter fruit and vegetable producing section. The project also will help to make productive 7,000 acres of citrus fruits which heretofore have borne little marketable produce because of water shortage.

DAILY DIGEST

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Section 1

September 6, 1939

WORLD COTTON CONFERENCE

The opinion that increased war requirements for cotton would be less than the loss to cotton producers by interference with normal activities in Europe was voiced by Secretary Wallace yesterday in opening an international conference called to discuss the general world cotton surplus. Delegates are attending for Britain, France, India, Egypt, Brazil, Soviet Russia, Peru, Mexico and the Sudan.

"So far as the immediate cotton situation is concerned," Mr. Wallace said, "the events of the last few days cannot be interpreted optimistically. In fact, the world cotton situation has become more difficult. The possibilities of utilizing in the immediate future the burdensome supplies of cotton have become poorer rather than better. It seems likely that any increased use of cotton for military purposes in the combatant countries will be much more than offset by decreased use for ordinary purposes. Also, the problem of transportation from exporting countries to importing countries has become acute." (New York Times.)

SCIENCE CONGRESS

Scientists "who subscribe to the philosophy of totalitarian states" should be excluded from the World's Brotherhood of Science, Prof. Percy M. Bridgman, famous Harvard physicist and scientist, declared yesterday at the Fifth International Congress for the Unity of Science at Cambridge, Mass. "These scientists are not true scientists because they have sworn away the individual freedom that is necessary to all scientific activity," he added. The aim of the unity congress, which has attracted about 200 of the foremost scientists of this country and Europe, is to "build bridges" among the various branches of science, to make possible the clarity of thought and to devise the common language that will coordinate all sciences. (New York Times.)

FINANCIAL ADVISORS

Secretary Morgenthau announced yesterday the appointment of three prominent financial men as an advisory committee to serve during the foreign crisis. The advisors, who are the Treasury's first "dollar-a-year" men since 1917, are W. R. Burgess, vice chairman of the National City Bank of New York; Tom K. Smith, president of the Boatmen's National Bank of St. Louis; and Earle Bailie, chairman of the Tri-Continental Corporation and member of J. & W. Seligman and Company. (Press.)

Apple Drop Messrs. Gardner, Marth and Batjer, of the Bureau
Prevention of Plant Industry, report the use of plant growth sub-
 stances to prevent apple dropping, in a note in
Science (September 1). "Thus far," they say in reporting tests, "trees
of seven varieties, including Yellow Transparent, Williams Early Red,
Oldenburg, Early McIntosh, Wealthy and three new early varieties, as
yet unnamed, have been sprayed with various concentrations of the
growth substances and a record obtained of the percentage of the total
crop dropping from the trees over a period of time in comparison with
the drop from untreated trees. Naphthalene acetic acid and naphtha-
lene acetamide applied just prior to fruit maturity have proved to be
particularly effective with all the varieties thus far treated. In
addition to these two substances, indole acetic and indole butyric
acids have been used, although the indications are that these indole
compounds are much less effective in preventing abscission than either
of the two naphthalene compounds. In the first experiments much
stronger concentrations were used than are now proving to be necessary.
Williams Early Red, as an outstanding example, was sprayed with .001
percentage of naphthalene acetic acid on July 13. By July 25 the un-
sprayed control trees had dropped from 64.2 to 90.8 percent of their
total crop on actual fruit count, whereas the sprayed trees had
dropped only from 1.3 to 1.5 percent. of their fruit. Concentrations
of .00025 percent. on other varieties have since been found to bring
about very marked inhibition of dropping. The effectiveness of some
of these compounds in such dilute concentrations would definitely
recommend their usage as a practical orchard procedure. Their prac-
ticability becomes enhanced if the present indications, that they can
be added to the regular spray schedule, are borne out by additional
experiments...."

L.C.L. Rail Business Week (September 2) describes two new Ice Boxes l.c.l. refrigerated containers exhibited recently at the convention of the National Food Distributors Association. "One holds about 350 pounds, depending on the commodity, and a tank that will take dry ice or natural ice. In use since last February, its principal loadings have been fish, fruit and vegetables, butter, serum and vaccines, delicate cheeses, ice cream, hatching eggs, fresh photographic films...The other comes in three sizes, 350, 3,000 and 7,000 pounds...These boxes handle dry ice for frozen shipments, natural ice and brine for fresh merchandise. Also, each big box comes equipped with a charcoal briquet stove guaranteed to hold the box interior at 70° in even the coldest weather. Many shippers, as a consequence, have been able to distribute in the winter less-than-refrigerator-carload shipments of liquids in glass and other goods that can't stand freezing."

Banker-Farmer Cooperation "The 11 states of the West and Northwest show an exceptionally fine record of banker-farmer accomplishments, when measured by the goal of 1,000 points established by the Agricultural Commission of the American Bankers Association," says Banking (September). "There are eight states that have reached the goal and three others have sufficiently high records to give promise of attaining the goal in the next year or two. To Oregon belongs the distinction of having reached the goal for ten consecutive years. North Dakota has a winning record of eight consecutive years, and both California and Washington for five consecutive years each. To attain and maintain this high record requires continuous effective team work among the members of the agricultural committees, the officers of the state bankers associations, the county key bankers and the agricultural extension forces of the colleges of agriculture, and the Agricultural Commission. The total accomplishments of these 11 states in 1938, as revealed by reports received, show that 103,946 farm people were contacted by bankers and encouraged and stimulated to engage in some form of project work, including farm inventories, credit statements, farm budgets, soil conservation, 4-H clubs, Future Farmers of America and miscellaneous local projects. There were 16,917 bankers reported as engaged in some form of special agricultural activities such as addressing agricultural meetings, visits to farms, etc., while 3,511 bankers attended agricultural meetings. Contributions of bankers to agricultural causes in these 11 states the past year amounted to \$43,332."

Microbiology Injection or oral administration of sulfanilamide
Congress or sulfapyridine has yielded "a significant degree of inhibition of experimental tuberculosis in guinea pigs infected with bovine or human tubercle bacilli," it was reported recently before the Third International Congress for Microbiology in a paper by Dr. Konrad Birkhaug of Bergen, Norway. "Both mortality rates and autopsy findings," the report said, "revealed a significant degree of inhibition of tuberculous infection among treated animals. Fewer tubercle bacilli were cultivated from tissues of treated than untreated animals, but their virulence was unaltered." A report that the Rocky Mountain wood tick transmits five kinds of diseases to man, in some cases infecting his victim with two varieties of disease at the same time, was presented by Dr. Herald R. Cox, of the Rocky Mountain Laboratory of the Public Health Service, Hamilton, Mont. The diseases are Rocky Mountain spotted fever, Nine Mile fever, Colorado Tick fever, tularemia and tick paralysis. (New York Times.)

Conservation
Under AAA

"The government, the administration and the methods used are always fair game for all critics, and most of these critics, when the AAA is mentioned, think only of crops plowed under and other unpopular phases of the AAA program," says an editorial in the Houston (Texas) Chronicle (August 26). "But the AAA program is a broad one and has done an immense amount of good for the country and its farmers. Texas farmers who took part in the 1937 AAA program, as an instance, practiced contour farming on approximately 1,380,000 acres and strip cropping on 676,000 acres. The result was so impressive that they needed no more encouragement to keep up those practices and their neighbors, who had ignored the program in 1937, took it up last year. Range conservation and improvement practices were carried out on 37,455 ranches in 17 states. The program reached 12,591 ranches in Texas alone. Those taking part in the AAA farm program in 1937 applied forestry practices on nearly 89,000 acres. That included planting, maintaining and improving stands of trees. And conservation practices that improve conditions for native wildlife are being observed on more than 50,000,000 acres of privately owned land under the AAA program...The phases of the AAA program mentioned here are just a few out of a great many. Some of them may prove impractical, of course, but the administration has done a splendid work in demonstrating to the farmer in many ways the value of conservation to him and to his country."

Railroad Car
Ice Machines

"In several sections of the country, where a supply of ice is not readily obtainable, ice making machines, housed on standard railroad cars, are used as 'complete ice factories' by growers, shippers and distributors of vegetables and fruits," says Ice & Refrigeration (September). "One use made of the refrigeration is the making of briquet ice used in bunkering ice refrigerator cars for shipping vegetables and fruits. When a surplus of briquets has been produced, snow ice, the product of the ice machine, is used as body ice inside the vegetable cars... The plant is complete in every detail, including its own generator for power and light. Everything is enclosed in an ordinary refrigerator car. The only connection to an outside source is the water hose to keep its storage supplied with water..."

Foreign
Trade

The increasing need of European nations preparing for war for manufactured products and lubricating oil from the United States stood out as the featuring of the report of the Department of Commerce on exports to Europe for July and for the first seven months of 1939, which was made public recently. Sharp increases in exports of these types, however, were more than offset, so far as the seven-month period was concerned, by declines in exports of grain and cotton, and the total for the period was less than for the first seven months of 1938. (New York Times.)

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WALLACE ON FOOD PRICES

Complaints of profiteering in food as a result of war-inspired operations are coming into the Department of Agriculture, Secretary Wallace said yesterday in his first press conference since the outbreak of the war. He insisted that the farmer was not to blame for price rises, reassured the United States that there were abundant supplies for domestic consumption and announced that plans were being made to study the food price situation. He declined to predict possible action by the department to curb prices, indicating instead that for the time being the Administration was not displeased by price increases, which thus far leave the quotations on most basic commodities considerably below both parity and the values these commodities registered as recently as last year. Many crops, he pointed out, are still below price levels that obtained prior to 1914.

The Secretary insisted that he could not state whether current prices were reasonable, because three factors must be studied in determining that conclusion: the relationship of current prices to parity, the relationship of prices now to those which obtained in recent years, and the "mental condition" revolving around public action to current visible supplies in relation to possible demand. The last condition, he added, is the unknown quantity that makes a conclusion impossible at this time.

Mr. Wallace pointed out that the cost of living rose only a negligible amount in the early years of the World War. Taking 1913 as a base of 100, the cost of living went to 102 in 1914, 104 in 1915 and 111 in 1916. By 1919 it had reached an all-time high of 176. In the current year it is estimated at 143. In the same period, he said, farm prices, which stood at 101 in 1913, have dropped to an estimated 95. (New York Times.)

WORLD COTTON MARKETS

The United States proposes to retain its fair share of the world cotton markets, Harry L. Brown, Assistant Secretary of Agriculture, yesterday told the World Cotton Conference. In presenting the problem of marketing American cotton, whose price is depressed by a huge surplus, Mr. Brown said that while "we propose to expand the domestic consumption of cotton," the loss of the export market "would mean not only stagnation in the southern part of the United States, but idle factories and unemployment in other areas because of the destruction of the purchasing power of the Cotton Belt." (Washington Star.)

Poultry, Egg Situation Larger supplies of poultry and eggs than last year continue to feature the poultry and egg situation, according to the Bureau of Agricultural Economics. Market receipts of dressed poultry in August were 9 percent above last year. Receipts during the remainder of 1939 and early 1940 probably will continue larger than in the corresponding weeks of the 1938-39 marketing season. United States storage stocks of poultry, now close to the low point for the year, were 24 percent larger on August 1 than last year. Because of the expected larger marketings of poultry this fall, it is expected that storage stocks by January 1, 1940, also will exceed those of a year earlier. Combined holdings of shell and frozen eggs on August 1 this year were 8 percent above last year but 9 percent below the 1928-37 average. Egg production during the fall of 1939 will probably continue about the same or slightly larger than last year. The ratio between feed prices and egg prices in August continued slightly more favorable to egg producers than the 1928-37 average but less favorable than in the same period last year. On the basis of the August 1 Crop Report, it appears that relative feed costs may continue less favorable than last year but more favorable than the 10-year average.

Civil Service Examinations The Civil Service Commission announces the following examinations: No. 94, unassembled; Senior Plant Anatomist, \$4,600; Senior Soil Physicist, \$4,600; Assistant Physiologist (Plant Hormones Investigations), \$2,600; No. 95, unassembled; Biochemist (Nut Investigations) \$3,800; Pomologist (Fruit Breeding), \$3,800; Pomologist (Physiology), \$3,800; No. 96, unassembled; Associate Agronomist (Forage Crops), \$3,200; Assistant Agronomist (Forage Crops), \$2,600; Assistant Agronomist (Cotton), \$2,600; Assistant Pathologist (Corn Investigations), \$2,600; Bureau of Plant Industry. Applications must be on file not later than the following dates: (a) October 2, if received from States other than those named in (b); (b) October 5, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Ventilation for Cars "Taking advantage of a simple rule of nature -- that cold air presses down -- scientists of the federal Bureau of Plant Industry devised a new method of ventilation which makes it possible to handle long-distance shipments of citrus, other fruits, and vegetables with a minimum loss from extreme temperatures, both cold and warm," says Florida Grower (September). "In the plan worked out by C. W. Mann of the bureau, heavy paper, canvas, or light metal is placed over the openings at the bottom of the bunkers. This forces the air coming in from outside through the top bunker opening and over the top of the load where it filters down. In this way the top of the load gets the benefit of

the incoming cold air and there is no quick massing of cold air at the bottom of the car. During two years of tests with citrus shipments from California, it was found that vents could be left open until outside temperatures reached as low as 25 degrees without injury to the fruit. This improvement in ventilation will make it possible for shippers to shorten the season when produce must be precooled before shipment or be shipped under refrigeration, says Mr. Mann. Since demonstrating the effectiveness of top to bottom ventilation, Mr. Mann has devised an adjustable panel which can be attached permanently to the ice bunker openings to replace temporary baffles used in the tests. The Department of Agriculture has applied for a public service patent to insure its free use by all shippers."

Grain Drill **Implement & Tractor** (September 2) in an article
Improvements on grain drills, says: "Modern improvements involve refinement of the feeds, more substantial construction with steel employed throughout, improvements in furrow opening and covering, larger sizes for use with tractors, etc. An interesting development for the western winter wheat territory has been the deep furrow or lister furrow drill. The furrow opener leaves a lister-shaped furrow and produces a much deeper furrow into which the seed is deposited. A sizeable furrow between ridges is left after the seed has been covered. This has a two-fold purpose -- to prevent blowing and to absorb and retain moisture. With this type of drill the seed is planted in 14-inch spacings, resulting in better rooting and a field thoroughly covered despite the fact that a smaller quantity of seed is used...Excellent results have followed deeper furrow seeding where the seeding follows the contour. Perhaps as contour farming becomes better established in the Great Plains there will be increased interest in deeper seeding in furrows which better conserve moisture...More attention has been given fertilizer distribution in the modern grain drills. Fertilizer manufacturers recommend fertilizer placement with some soil between the seed and the fertilizer. Most grain drills now make provision for such placement. Some go even further and provide methods for optional placement. When the ground is wet it is desirable to place the fertilizer close to the seed. When the ground is dry it is advisable to place the fertilizer above the seed so that it will trickle down to the sprouts with the first rain. In many sections of the country placement on one side or the other is preferred. All such variations are possible with many current drills..."

Straw A small, two-wheeled trailer, quickly attachable
Catcher to most harvesting combines, makes it possible to save all straw, chaff, and waste grain. It holds enough straw to make a large-sized bale, and is operated by a trip rope, making it easy to dump the piles in windrows. (Country Home Magazine, August.)

Phosphorus
Fixation

In an article on phosphorus, in the Fertilizer Review (July-August) W. H. Pierre, head of the Department of Agronomy, Iowa State College, says in part: "The question as to what percentage of the phosphorus added in fertilizers is recovered by the first year's crop and what percentage is available for succeeding crops is one of considerable practical importance. The objective in the use of fertilizers is, of course, to recover in increased crop growth as much of the added plant nutrient as possible. This amount will vary with the type of soil and kind of plant, as described, and also with the amount and kind of fertilizer applied. In general, experimental work shows that in broadcast applications under ordinary conditions not more than 10 to 20 percent of the phosphorus applied is recovered in the first crop. In meadow and pasture crops where the fertilizer is applied on the surface this value is even less. Some of the residual phosphorus is recovered in succeeding years, but not much data are available as to the percentages recovered. In a pasture experiment now in progress at the West Virginia Agricultural Experiment Station the application of 500 pounds of superphosphate per acre in 1930 and again in 1932 still exerted a marked effect $4\frac{1}{2}$ years after the last application, not only on the yield and the type of vegetation but also on the phosphorus content of the herbage. Although the herbage had been removed ever since the first application of superphosphate was made $6\frac{1}{2}$ years previously, the percentage of the added phosphorus that was recovered in the herbage during that period ranged from only about 20 to 30 percent..."

Fields for
Entomologists

Agricultural News Letter (August-September) contains an abstract of an article by M. D. Leonard, from the Journal of Economic Entomology (32:2, 1939). "It is pointed out that probably not more than 10 percent of the professional entomologists (and this undoubtedly applies to plant pathologists as well) are employed at present by business and industry," it says. "To illustrate the possibilities in these fields, it lists the following: The agricultural insecticide industry which is to date estimated to be at least a \$100,000,000 business annually based on retail sales costs in the United States. The control of insects affecting stored grains and other stored products which cause great losses to large businesses handling such products. The more efficient and economical prevention and the reduction of losses to both the size and quality of crops due to insect and disease attack, which is extremely important in the rapidly expanding canning and frozen-food industries. More effective and reliable exterminating services for city and suburban houses and buildings, including rat control and termite treatments, in an already nation-wide but as yet relatively little-developed industry, which is estimated to collect upwards of \$50,000,000 annually for its services..."

DAILY DIGEST

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WALLACE ON SUGAR SUPPLY While lacking authority to exercise direct control over food prices, the Federal Government moved quickly yesterday to use all its influence to check rises, credited to a war psychology, which apparently have no justification in view of abundant supplies, says a report in the New York Times. The Department of Agriculture took the first step in this direction by issuing an announcement that sugar stocks on hand are greater than a year ago and could be increased almost without limit simply by raising import quotas. The statement on sugar read in part: "The total stocks of sugar in the United States held by cane refiners and importers on July 31 aggregated 1,035,000 tons, as compared with 909,000 tons at the same time last year. In addition to these cane sugar stocks, beet sugar factories had 725,000 tons of sugar on hand as compared with 500,000 tons last year. Indications are that the sugar crops in the domestic areas are more than ample to meet their quotas."

NEW CABINET MEMBERS The status of Cabinet members was granted yesterday to Federal Loan Administrator Jesse H. Jones, Federal Security Administrator Paul V. McNutt and Federal Works Administrator John M. Carmody. (Press.) An Associated Press report says Harry Slattery, Under Secretary of the Interior, was appointed by President Roosevelt yesterday to be Administrator of the Rural Electrification Administration, to succeed John M. Carmody.

COTTON-RUBBER EXCHANGE The United States will go through with its agreement with Great Britain for the exchange of 600,000 bales of cotton for 175,000,000 pounds of British rubber. The State Department announced that President Roosevelt yesterday issued a proclamation of the agreement between the two countries for the exchange of cotton and rubber signed at London on June 28. Point No. 4 of that agreement permits Britain, because of the advent of war, to make immediate use of the cotton, which otherwise was to have been stored up as a war reserve. (A.F.).

ADVISORY ECONOMISTS Secretary Morgenthau yesterday rounded out his advisory group with the naming of three economists: Jacob Viner of the University of Chicago; Walter W. Stewart and Winfield W. Riefler, both of the Institute for Advanced Study, Princeton. (New York Times.)

Adjustment
Programs

In an article, "Idle Men, Idle Plants -- and Farmers," in the Land Policy Review (July-August) James P. Cavin, of the Agricultural Adjustment Administration, says in conclusion: "The impact of the business cycle and of chronic under-employment of resources prevents adjustment programs taken within agriculture itself from being fully effective. Sharp downswings in business activity and national income mean a contraction in the demand for agricultural products, hence a fall in farm prices and incomes. Even though this fall may be partially counteracted by a fall in the prices of things that farmers buy, this is usually not sufficient to prevent farm operations from being conducted at a loss. One way of temporarily and partially offsetting these losses is to neglect the maintenance of capital equipment and of the soil resources of the farm. It is, of course, precisely this sort of resource deterioration that our farm programs aim to halt. Furthermore, in periods of both temporary and chronic unemployment, the normal flow of population from farm to city is checked and there is a backflow of persons into agriculture that increases the number of persons dependent on farm operations for a livelihood at the very time when agriculture is unable to return a normal income to those who ordinarily would remain on the land. To put it briefly: Adjustments within agriculture can be accomplished most successfully when the demand for farm products, as reflected in the size of the national income, is high enough to render farm operations profitable and when agriculture is not carrying the deadweight of persons backed up on farms because of subcapacity operation in industry. For this reason farmers have a deep interest in the economy as a whole and in programs which aim to reduce the magnitude of business fluctuations and to expand industry to capacity output and full employment."

Scientific
Cooperation

Statesmen could learn much about international cooperation if they would take a leaf from the book of scientists, Secretary of State Hull this week told members of the International Union of Geodesy and Geophysics. "Through modern international cooperation science has progressed with strides which would have been impossible if restricted within national and economic borders," he declared in a speech of welcome to 500 delegates from 35 nations. "It is my fervent hope, which the people of this country share," he said, "that the day may soon come when the statesmen of the world will solve international politics problems in the same dignified and friendly spirit." (Press.)

Fertilizer
Purchases

The average amount of fertilizer purchased in 1938 by each fertilizer user interviewed amounted to 9.6 tons, it was brought out in the survey recently made by the National Fertilizer Association by means of personal interviews with 32,147 farmers. Of the total number interviewed, 90.4 percent reported

they had purchased fertilizer during the year. The survey was made largely in the older farming regions, where fertilizer is generally used, and the ratio for the entire country would not be so high. The average amount purchased as shown by the survey is also somewhat above the average for the entire country. The average amount purchased is pulled up by a relatively small number of large buyers. The typical buyer is one who uses between one and five tons a year, with nearly 50 percent of all users falling in this group. Only 7.2 percent of all buyers use 25 or more tons a year, while 7.9 percent use less than one ton. The large users, while numbering only 7.2 percent of the total, buy just about half of all the fertilizer used, while the purchasers of less than one ton each, accounting for 7.9 percent of the total number, buy only 0.5 percent of the total tonnage. (Fertilizer Review, July-August.)

Peanut Bran for Rooting John V. Watkins, of the Florida College of Agriculture, reports in Florida Grower (September) that peanut-hull bran is effective and economical for rooting cuttings. "When the peanut-hull bran was mixed in equal parts, by volume, with sharp white sand," he says, "the resulting mixture was loose in texture, crumbly and friable, and had all of the qualities that are deemed desirable in a good rooting medium for starting cuttings...Cuttings of some few species of plants definitely preferred ground peanut hulls to peat moss as a component of the cutting bench mixture. Most of the kinds that were a part of the experiment, continued, as in the past, to root very rapidly and heavily in the peat moss-sand mix, but these numerous species also found the bran to be an entirely satisfactory substitute. Plantsmen in the vicinity of the gulf coast can buy this ground peanut product at approximately one-fourth the cost of imported European peat moss... So far as we have been able to observe, this peanut product^{is} reasonably, if not wholly free from weed seeds, toxic substances and organisms that are responsible for the dread damping-off disease. Scientists, after determining the acidity of the peanut-hull bran, report that it is sufficiently acid for the needs of the acid loving plants, such as the azaleas, the camellias, and the hollies..."

European Crop Prospects Generally favorable crop prospects were indicated for the combatant nations of Europe in a roundup of crop reports from that Continent made public this week by the Department of Agriculture. This report showed that grain and root crops generally are good in France, Germany and Great Britain. The yields of small grains are expected to be "around normal" on the basis of reports as of Sept. 1. On that date, when Britain and France declared war on Germany, the department reported that the harvesting of small grain and hay crops was mostly completed, but that corn and root crops were still in the fields. (Press.)

Hormones Aid Germination Pollen grains were made to germinate more quickly and surely, and to grow their fertilizing tubes longer and more rapidly by treatment with a growth hormone, in experiments conducted by Dr. Paul F. Smith of the University of Oklahoma. Results may be of considerable practical importance in plant breeding, greenhouse horticulture and other plant sciences and industries where pollen is collected and applied by hand. (Science, August 18). To fertilize a flower and start the development of seed, pollen grains must germinate and produce a long tube, that grows down through the tissues of the flower's pistil, carrying the fertilizing nucleus. Some pollen grains are slow about this. Treatment with indole-3-acetic acid, standard growth-promoting substance, cut germinating times in half, greatly increased percentage of germination, and in some cases doubled the length of the pollen tubes, of the five species treated. In the most extreme case, that of Austrian pine, the untreated pollen did not germinate at all, while treated pollen showed 51% germination in six hours. (Science News Letter, September 2.)

Strategic Materials Quite the most self-contained nation on the earth, the United States is now storing up against an emergency the most essential of the "strategic" materials that would soon become scarce if we engage in war or war elsewhere in the world cuts us off from needed supplies. Strategic materials are aluminum, antimony, chromium, coconut shell char, manganese of ferro-grade, manila fiber, mica, nickel, optical glass, quartz crystal, quick-silver, quinine, rubber, silk, tin, tungsten, wool. The government is now engaged in laying up what supplies it can of some of these materials. Some of the "critical" materials, less seriously needed in an emergency, may also be purchased for stock-pile storing. This list includes: asbestos, cadmium, coffee, cork, cryolite, flaxseed, fluorspar, graphite, hides, iodine, kapok, nux vomica, opium, phenol, picric acid, platinum, scientific glass, tanning materials, titanium, toluol and vanadium. Artificial substitutes, such as nylon and vinyon, for silk, and synthetic wool from milk's casein promise to help out greatly. (Science News Letter, September 9.)

Cotton Export Program The Department has announced that cumulative sales and deliveries of cotton and cotton products for export under the cotton export program totaled 1,180,174 bales through August 31. Of this total 29,029 bales represented cotton products. Actual exports of cotton from August 1 through August 31 were 278,000 bales as compared to 236,000 in the comparative period last year and 208,000 from August 1 through August 31, 1937.

DAILY DIGEST

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Section 1

September 11, 1939

FOOD SUPPLY

President Roosevelt assured the American people through his press conference Friday that there was an actual surplus of foodstuffs of every variety and that there was no basis for fears that prices might again "go through the roof" as they did during 1917 and 1918 when the country was at war, says a report to the New York Times. In a radio broadcast Friday night, Secretary Wallace declared the "runs" by timorous housewives on grocery stores were as pointless as would be a descent on banks backed by ample reserves. "These housewives," he said, "don't know it yet, but they will soon find out that we have in agriculture a mechanism which in a measure does for agriculture what the government insurance of bank deposits does for banks. Through the ever normal granary plentiful quantities of wheat and corn and cotton have been stored by the farmers and the government..." Describing the operations of the "ever normal granary," Secretary Wallace said that farmers in the past year had carried under loan, or the government itself had carried, 80,000,000 bushels of wheat, 260,000,000 bushels of corn, 11,000,000 bales of cotton "and smaller quantities of a number of other products."

COTTON ESTIMATE

The Agriculture Department forecast this year's cotton crop Friday as 12,380,000 bales of 500 pounds gross weight. That forecast of production, based on the condition of the crop September 1, compared with a forecast of 11,412,000 bales a month ago, 11,943,000 bales produced last year, and 13,800,000 bales, the average production for the ten years, 1928-1937. (A.F.)

SURPLUS CROP LOANS

Administration farm officials said yesterday the war boom in commodity prices virtually had wiped out a potential Government loss of \$119,000,000 on loans advanced to farmers on surplus crops. Such a loss was indicated by an inventory of crop loans last March 31. Officials said the sharp advances in prices of wheat, cotton, corn, wool and other products under the stimulus of the European war had increased the value of products pledged as collateral for the farmer loans by more than \$100,000,000. (A.F.)

Russian Thistles "Russian thistles are coming to be looked upon as an asset rather than a liability in the southern Great Plains where memories of the Dust Bowl still are fresh," says American Cattle Producer (September). "Today, the Soil Conservation Service reports, many farmers of the Panhandle of Texas and Oklahoma, eastern Colorado, eastern New Mexico, and western Kansas have learned that by mowing the thistles while still green they can provide hay which will carry their live stock through a hard winter, and that the thistle roots and stubble left on the ground will retain their anchorage against the force of strong winds and thereby provide protection for the soil...The soil conservation specialists also state that thistle stubble on the ground does not provide as much protection against wind erosion as do sorghum crops, but they are much better than no cover in this respect...Various agricultural agencies have made exhaustive tests in the use of thistles for stock feed. Lamb feeding experiments conducted at Akron, Colorado, indicate that Russian thistles compare favorably with cane fodder. Tests in Kansas have been favorable for thistles as cattle feed but indicate that when the plants are hard they should be ground and soaked before feeding. Tests at Miles City, Montana, indicate that thistle hay has about half the value of good alfalfa and that best results are obtained by using it as about 50 percent of the roughness ration. Other tests in this state show that good thistle hay will carry cattle through the winter in good condition. Russian thistle hay is high in protein and mineral salts and low in carbohydrates. When cut in the bloom it contains as much protein as alfalfa but from 10 to 15 percent less digestible nutrients..."

Freezerette for Coolers Butchers' Advocate (August 30) reports a "freezerette" for walk-in coolers. "This new product," it says, "can be used in any walk-in cooler without alterations being necessary. The freezerette will carry a temperature as low as 10° below zero, it is 4'6" in height, 3'9" in width, with a depth of two feet. It has adjustable shelves and a freezer merchandise capacity of 400 lbs. It is equipped with but a quarter horse power motor, assuring a low operating cost..."

Chemist Appointed Dr. Lee T. Smith, chemist of the Bureau of Dairy Industry, has been selected to head the Carbohydrate and Derived Products Division of the Eastern Regional Research Laboratory, Dr. Knight, Chief of the Bureau of Agricultural Chemistry and Engineering, has announced. The investigations under Doctor Smith will be concerned chiefly with the development of new and expanded uses of milk sugar and potato starch. Doctor Smith came to the Department a little more than a year ago after nearly 20 years with large industrial concerns for whom he carried on research in the manufacture and utilization of plastic materials.

Foodstuffs Barriers Marketing Laws Survey, a WPA project, has issued its first publication, a compilation of state laws illustrating barriers to trade between states, says a report in Food Field Reporter (September 4). Charts now made available in printed form were originally prepared by Marketing Laws Survey for use of National Conference on Interstate Trade Barriers. Present publication deals with eight groups of state statutes: Motor vehicle, dairy, oleomargarine, livestock, eggs and general food laws, general nursery stock laws, liquor laws, state use taxes and general preference laws. Principal provisions of laws of each of the 48 states on these subjects are set forth in chart form. Publication may be had for 25 cents from Superintendent of Documents, Government Printing Office, Washington, D. C. This is first of a series of publications dealing with trade barrier laws to be issued by survey.

Locker Plant Expansion "Many refrigerated locker plants are finding the going rather difficult," says the National Provisioner (September 2). "Some close to the situation say that two factors are responsible -- construction of plants in communities where a profitable volume of business is unobtainable, and inexperienced management. 'Most of the refrigerated locker plants now operating have been located carefully,' says a recent report of the U. S. Department of Agriculture, 'and the newer plants are, as a rule, well constructed. Some of the plants are having a hard time, however, and in many instances the trouble can be traced directly to a poor choice of management. The more successful managers are not only good butchers and mechanics, but good salesmen and collectors as well. Most locker plants have all the hazards of a retail business and often fail if patrons cannot be satisfied and held.' A number of the more successful managers," this government report says, "have been farsighted enough to adapt their equipment to local needs; others have reduced charges for locker space when crops were bad, and some have provided rooms for storing commercially-frozen products and even for storing fur coats in summer. Such services generally pay their way as far as actual costs are concerned, and more than pay their way in good will toward the plant.'..."

British Lift Ban on Pork The United States has been notified that Great Britain has removed import quotas on cured pork products, thereby opening the way for increased sales of American meats. L. A. Wheeler, of the Agriculture Department's foreign service, said the action was taken so the British might obtain ample supplies to feed their armed forces. The quotas affected hams, bacon and some other cured pork products. Lard, the major American pork export product, was not affected by the British quota system. (Associated Press.)

Consumer's
Dollar

In a paper in the September Journal of Home Economics, Henry M. Busch, of Western Reserve University, says in part: "We know that in the present decade the American people who possess a normal income are spending about the same proportion for food and clothing as they have in the past, but that an increased proportion of the consumer's dollar is going for services rather than consumable goods...The most rapid expansion of service activities has been in the field of personal transportation and personal adornment. It is in relation to this question of family expenditures for services rather than goods that we encounter one area of danger in our current economic thinking. Certain classical economists and some businessmen...say that if consumer budgets are based on minimum subsistence costs or minimum comfort costs, which include chiefly the items of food, clothing, shelter, and medical attention, manufacturers can again compete profitably, the consumption of goods will rise, the whole circle of employment will widen, and the spiral of prosperity will again go up. They forget two important considerations. In the first place, the production of goods in America had become so efficient that by 1929 we were producing more and better goods than in 1919, with approximately 10 percent fewer workers in direct productive industry...If the service aspect of American economic life can be increased as rapidly as technological efficiency releases workers from the productive enterprises, no great harm will be done to our economic life...The second factor which the extreme advocates of the deflation of production costs forget, is that we have elaborated a huge economic structure devoted to the rendering of services and based on capital equipment which must continue to get its share of the consumer dollar or all of economic life will sag. This structure includes schools and colleges, stores, hotels, restaurants, theaters and other structures devoted to amusement, most of the equipment devoted to the maintenance and operation of our automobiles and other modes of transportation, banks, insurance companies, and social and religious agencies. Any budget-making that leaves out of account the service items on which so large a share of the American economy has come to depend is good neither for the individual nor for society..."

City Market
Improvement

In a short article, "Replanning Our City Markets," in the Journal of Home Economics (September) Caroline B. Sherman, of the Bureau of Agricultural Economics, reports that "age is the chief explanation of the deficiencies of our large produce markets. Beginning with the famous Faneuil Hall of approximately 200 ripe years and the old French market in New Orleans of 150 years, they range slowly down. Of 101 markets recently studied, all but 44 were more than 20 years old. Most were built before the coming of important phases in marketing perishables -- motor trucks, chain stores, railroad refrigeration, growth of city, and increased per capita consumption, not to mention increased appreciation of light, air, ventilation, and sanitation..."

DAILY DIGEST

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Section 1

September 12, 1939

MOST CROPS BOUNTIFUL

With the nation's cribs and warehouses already filled with larger than normal surpluses from previous years, the Department reported yesterday that bountiful harvests of most grain crops, vegetables, fruits, feed and fiber crops were in prospect. To housewives concerned over possible shortages due to the European war, the Department said larger than average crops of corn, barley, rye, grain sorghums and hay--the raw material for meats, dairy and poultry products--beans, sweet potatoes, sugar cane, sugar beets, apples, peaches, pears, grapes and vegetables were indicated. The Department based its consumer assurances on the Crop Reporting Board's estimate of production, as indicated on September 1. (New York Times.)

SUGAR QUOTAS SUSPENDED

In his first attempt to stem rising food costs President Roosevelt yesterday suspended statutory quotas restricting the importation and domestic marketing of sugar, and explained his action was necessitated by efforts of speculators to capitalize a temporary retail shortage of the staple to "capture windfall profits". In an explanatory statement accompanying his proclamation suspending the sugar quotas until further notice, the President pointed to "a great number of complaints within the past few days that the quota restrictions on sugar marketing are making it difficult and costly for housewives and industrial users to get enough sugar to supply domestic needs". Mr. Roosevelt acted under authority of the Jones-Costigan Act by which he may suspend the quota restrictions whenever he finds that "an emergency exists with respect to sugar". Designed to stabilize sugar prices in this country and to bulwark the internal economy of Cuba, Puerto Rico and other offshore sources, the law is an integral part of the Agricultural Adjustment program. (New York Times.)

ARGENTINA BAN ON U.S. IMPORTS

The Argentine government, due to curtailment of European supply sources because of the war, has relaxed to some extent restrictions on imports of goods from this country, the Commerce Department announced yesterday, according to a report in the Washington Post. A more favorable rate of exchange also has been allowed on certain American products. Action of the Argentine is regarded as an example of the extent to which Latin-American nations are dependent on this country for supplies of manufactured goods, now that former European sources have been disrupted.

Combining "Hybrid corn breeding work at the University of
Inbred Illinois agricultural experiment station is organized
Lines so that proper balance is given to studies of genetics,
disease resistance, insect resistance, and combining
values of the various inbred lines," says Oren Bolin, Associate,
Plant Genetics, University of Illinois in the Prairie Farmer (September
9) "The part which I shall deal with here is the combining value of
the lines which we are using. At the present time we are using 138
standard inbred lines. From these standard lines it would be possible
to make 9,453 possible single crosses and 43,389,270 possible double
crosses. Of course, you see it will be impossible to make and test
this large aggregate of material. With this in mind we have attempted
to find a way of predicting what the various inbred lines will do when
combined with one another...The reason we need more than one hybrid
for an area is because the various inbreds contribute different char-
acteristics to the double cross and those characteristics desired for
one type of environment might not be the same characteristics as need-
ed for another environment. In our search for better hybrids we are
this year testing approximately 500 new double cross combinations and
in an attempt to more accurately determine the combining value of our
lines we are testing approximately 900 single crosses in the various
sections of Illinois."

Ensiling "Sorghum for silage is handled in exactly the
Sorghum same way as corn, says H. H. Hughes, head of the Iowa
State College farm crops department," in a report in
Wallaces' Farmer and Iowa Homestead (September 9). "As with corn, it
is not necessary to add molasses. Sorghum gives the greatest yield
of silage material if it is not cut until the seed is in the hard
dough stage. If the crop is cut earlier, the silage is likely to be
too watery and not so palatable. Atlas sorgho, one of the leading
varieties planted in Iowa, usually has to be allowed to stand until
shortly before frost. When it does get sufficiently mature, it may
give yields considerably larger than corn under the same conditions.
Sorghum silage, pound for pound, has a value approximately 85 percent
that of corn silage. Much depends upon the amount of grain present
in the sorghum heads. If the crop has no heads, it falls short for
fattening purposes."

Food The future of the government's food stamp plan
Stamp Plan for putting surplus foodstuffs into the hands of under-
privileged consumers was discussed in the food industry
last week as prices on many of the thirteen commodities designated as
surplus by the FSCC climbed sharply in the speculative reaction brought
on by the war. Grocery manufacturers and retailers learned from govern-
ment officials that the government has no immediate intention of alter-
ing its stamp distribution plan. They added that Federal officials con-
sider recent price advances only temporary and look for a reaction in a
short time. (New York Times, September 10.)

New Steel Corn Bins "Several score elevator men, conservation committee members and interested farmers were on hand at Shirley Wednesday morning to witness the erection of the first of hundreds of new steel corn bins to be put up in Central Illinois," says the Bloomington Pantagraph August 31. "The circular, galvanized steel structures are being erected by the AAA and the commodity credit corporation for the purpose of storing corn received from farmers' sealed bins...The foundation consists of a circle of clay building tile or concrete blocks, held together by a wire cable stretched around them. The center of the circle is filled with sand or gravel, over which a steel floor is laid for the bottom of the bin. The bins are about 18 feet in diameter. The steel floor is laid about four inches higher at its center than at the rim, an allowance made necessary by the flattening out caused by extreme weight at the center point when the bin is filled with corn, Mr. Douglas explained. Each bin is about 10 feet in height, from the ground level to the eaves. Each is topped by an all steel cone shaped roof...The bins at Shirley will each hold 2,169 bushels of corn...Erection of the bins throughout the state and nation is an attempt to meet the problem of storage of both old corn and the big new crop anticipated..."

Tobacco Outlet New use of nicotine in making insecticides offers "the greatest hope for increased consumption" of tobacco. Such is the finding by a committee from the federal department of agriculture. Nicotine, highly toxic to insect life, is adapted to the compounding of both of the main types of insecticide; the "contact" type and the stomach-poison type. Researches during the last ten years have developed wider applications. Formerly nicotine was used only as a contact insecticide in the form of spray or dust to control a limited group of soft-bodied sucking insects. Developments of the last five years have greatly increased the efficiency of nicotine and enlarged its use in this field. New compounds have been worked out which are adapted to the control of chewing insects and lack the hazards to human health carried by the metallic poisons. Substitution of nicotine for poisons heretofore relied upon in apple orchards alone, "should offer an outlet for a considerable quantity of low-grade tobacco." (Columbia South Carolina State, September 1.)

British Grain Trade Control Orders by the British Board of Trade centralize the foreign trade of the United Kingdom in cereals and cereal products under a Food Controller, authorize the requisitioning of stocks, and place the milling industry under the supervision of the Board of Trade, according to a cable to the Office of Foreign Agricultural Relations from the American Agricultural Attache in London.

Accidents on Farms

Farming may not seem a hazardous occupation, but accident studies of farms and other occupational groups reveal a higher ratio of accidental deaths on the farm than elsewhere. In a recent year, fatal accidents in agriculture numbered 4,500 compared with 2,300 in manufacturing and 2,800 in construction activities. S. H. McCrory, of the United States Department of Agriculture, who has made a study of farm accidents, finds one reason they are more serious is that the victim is likely to be working alone. A factory worker caught in a lathe usually has a fellow workman nearby who can cut off the power. But a farmer caught in a power take-off of a tractor, attacked by a bull, or kicked by a horse, is likely to be alone. Farm machinery manufacturers are equipping more and more machinery with protective devices, and the safety of old models may be improved by having parts put on them, says Mr. McCrory. Among other causes which he found conducive to farm accidents are the need for haste in the rush seasons, which often means working after dark or with makeshift repairs, and occasional attempts to use "home-made" electric wiring. Most of the farm accidents, Mr. McCrory believes, could be avoided if the farmer is his own "safety inspector" in seeing that neither he nor his employees take chances.

Civil Service Examination

The Civil Service Commission announces the following examination; No. 101, unassembled; Junior Domestic Attendant (Seamstress), \$1,320 a year, Bureau of Home Economics. Applications must be on file not later than (a) October 9, 1939, if received from States other than those named in (b) October 12, 1939, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Bee-Keeping in Georgia

Bee-keeping, as indicated by statistics recently released by the Georgia State Department of Agriculture, is becoming a source of increasing income to many Georgia farmers. Not very long ago a few hives per farm was considered sufficient as bee-keeping was regarded important only for the purpose of supplying the family larder with this delectable sweet. Production of honey, however, is rapidly assuming a place of commercial importance in Georgia. The mild climate permits bees to survive the winter months with a minimum of protection. An abundance and variety of nectar-producing plants is a favorable factor, while the longer working period for bees results in higher production of honey than in less favorably endowed sections of the United States. The income from honey is not the only cash available from bee-keeping. A recent development of importance is the production and marketing of queens and package bees for less favorably located sections of the north, and elsewhere, where bees cannot survive the low temperatures. (Atlantic Constitution, September 4.)

DAILY DIGEST

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Section 1

September 13, 1939

PRICES AND SUPPLY

Federal studies of prices of commodities as they reflect the war boom have been extended to non-agricultural products in the administration's effort to prevent a recurrence of profiteering such as marked the World War, President Roosevelt said at his press conference Monday. He added that no steps in addition to the proclamation raising the quotas on imports of sugar was contemplated, but indicated that if conditions arose making them necessary measures to meet them would receive immediate attention. This decision appeared to be in line with the belief expressed privately in several official sources that the increases in food prices which marked the beginning of the war in Europe are beginning to level out of their own volition as the public realizes that there are no shortages of essential commodities.

Further reassurance of ample food supplies was given in the regular report, as of September 1, issued by the Department relative to stocks of foodstuffs in cold storage on that date. This report showed large holdings of most such types of foodstuffs, with many increases in important items during the month of August. Increases were shown in stocks of manufactured dairy products, cheese, frozen fruits and frozen vegetables. Decreases occurred in frozen and cured meats, poultry and eggs. The egg movement was particularly specified as a seasonal one, since in August large stocks are disposed of to make way for the new "crop" destined to go into storage. (New York Times.)

FSCC BUYS DRIED PRUNES

The Department announced yesterday that the Federal Surplus Commodities Corporation has been authorized to buy surplus dried prunes in California, Oregon, and Washington under a program designed to help improve marketing conditions for growers and provide supplies of dried prunes for relief distribution. The action was taken following a request by the prune industry for a program which would include relief purchases of surplus supplies and a commodity loan on prunes. Since this request was made prune prices have advanced substantially. All prunes bought must meet California "standard quality" specifications or the equivalent. The authority under the program to buy prunes from growers and associations of growers expires after June 30, 1940.

Hessian Fly Infestation An increased infestation of the hessian fly this year throughout a large portion of the wheat belt is shown by recent surveys made by the Bureau of Entomology and Plant Quarantine in cooperation with State experiment Stations. The pest is present in moderate to extreme numbers in many localities in Pennsylvania, Ohio, Indiana, Illinois, Missouri, southern Iowa, southeastern Nebraska and eastern Kansas. Where rainfall has been sufficient to cause the growth of volunteer wheat since harvest, conditions have been favorable for the fly's increase. Farmers are advised to observe the safe sowing dates when putting in their fall wheat. These dates can be obtained from their local county agents or State Experiment Stations.

Pilot Plants Pilot plants form an important part of the program for research on the industrial uses of farm products at the four regional laboratories now under construction, says Dr. W. W. Skinner, Associate Chief of the Bureau of Agricultural Chemistry and Engineering. Pilot plants at these laboratories will do for industry very much the same kind of work that the "demonstration farms" have done for farmers -- supply practical evidence of the value of new methods and processes. The new laboratories, says Dr. Skinner, are planned to carry new discoveries through the doubtful stage where manufacturers who depend on profit for their existence are often unwilling to venture. Often the laboratory proves that a certain process is chemically possible on testtube scale. A manufacturer, however, wants to know whether it will work as well on a large scale, what the quality of the product will be, what raw materials and transportation costs will be, the expense for labor, and the price at which the product will have to sell to find a quantity market. The pilot plant stage supplies definite evidence on these questions. Production goes on a semicommercial basis. The research workers and engineers iron out the kinds in practical procedure. The pilot plant is large enough to give a definite line on costs, quality, and marketing problems.

Termite Diseases Science Service reports that "two new bacterial diseases have been discovered by Drs. P. H. DeBach and W. A. McOmie of the University of California... However, the only creatures they are known to kill are termites. One bacterial species turns the heads of the dead termites black. The other turns the heads and legs red. The red disease is more than twice as deadly to termites than the black. In two lots of 50 termites each, infected with the two diseases by laboratory feeding, there were 25 'red' deaths as against 11 'black' fatalities..."

**Chemical
Reaction**

Discovery of a new and revolutionary type of chemical reaction which, in effect, is a chemical dice game and which will enable scientists to gain new insight into mysterious natural processes such as the aging of wine and liquor was announced Sunday night by Dr. George Calingaert of Detroit to the American Chemical Society, opening its ninety-eighth meeting in Boston, Monday. Doctor Calingaert disclosed that contrary to chemical experience organic compounds of the same class would react with one another at ordinary temperatures through a judicious choice of operating conditions and catalyst -- a substance which causes a reaction to take place without becoming part of the resulting products. The reaction approaches perfection in efficiency since there is no loss through the formation of by-products or waste which are unavoidable in the ordinary processes of the organic chemical industry. "When like compounds begin to react, or 'fight,' with like, instead of only like with unlike, as was heretofore expected, it is time for chemists to revise their conceptions regarding the nature of the molecules in question," declared Dr. Calingaert, who will formally present his findings in a study of tetraethyl lead and the more volatile anti-knock compounds such as diethyldimethyl lead at a joint meeting of the organic and the physical and inorganic chemistry divisions of the society. The new reaction all but shakes the foundations of our general concepts of the behavior of atoms in molecules. A further exploration into the new field will lead to a better understanding of the nature of the forces which link atoms together to form organic compounds..." (Press.)

**Light-Producing
Chemicals**

The existence of two specific light-producing chemicals in the tiny bacteria that give the sea its strange luminescence after dark, as well as in glow worms and fireflies, the most efficient lighting mechanisms known to man, was reported recently before the third International Congress for Microbiology in New York by Dr. Frank H. Johnson and Professor E. Newton Harvey of Princeton University. The two substances, which shed light on the mysterious mechanism whereby some organisms are capable of producing a nearly 100 percent efficient light -- as compared with 12 percent for a good electric light -- are named "luciferin" and "luciferase," the latter being the ferment (enzyme) that enables the former to liberate its energy in the form of light. Drs. Johnson and Harvey also reported the discovery that sugar is the fuel burned by the living flashlights to produce their light-emitting substance. The light given off by bacteria, which is 97 percent efficient, Drs. Johnson and Harvey reported, is a chemical process, the natural accompaniment of the organism's respiration. The glow can be intensified, they found, by adding more sugar to the solution in which the bacteria are living, just as one might fire up a furnace by shoveling on more coal. Oxygen, of course, is necessary, for the more sugar the bacteria get, the more oxygen they consume and the more light they give off. (Press.)

Hogging Down

"Hogging down is an economical way to harvest the corn crop, providing good judgment is used in controlling the hogs," says Wallaces' Farmer & Iowa Homestead (September 9). "Limit the range to that which the hogs will clean up in from ten days to two weeks. If both fattening shoats and sows or smaller pigs are available, put the shoats in the area first and then follow for clean-up purposes with the sows or pigs. Condition the hogs to green corn before turning them in. Offer some of the stalks when the dent has formed in the kernel. Once the hogs are in the field, keep them provided with plenty of feed. Besides corn, provide the animals with protein supplement, minerals and plenty of water. Keep these materials handy. After they become fairly well finished, fattening hogs will not travel long distances. Well grown but thin shoats weighing from 125 to 150 pounds are preferred by most farmers for hogging down."

Trichina in Hogs

Only about one-fifth as many hogs are infected with trichinae today as were infected some 35 years ago, Dr. Benjamin Schwartz of the Bureau of Animal Industry recently told the Third International Congress for Microbiology. Doctor Schwartz, who is chief of the bureau's zoological division, based his statement on a $4\frac{1}{2}$ year study of the diaphragms of more than 25,000 hogs from the most important swine-breeding areas of the country. About 1.5 percent of all hogs are infected today as compared to about 7.5 percent in the period 1898 to 1906 when the bureau examined more than 8,000,000 pork samples. Diaphragms were studied because they are one of the preferred locations of the trichinae. It is safe to conclude that the number of trichinae in the hams, shoulders, loins and other portions would be even less. About 13,000 of all hogs studied were grain fed; about 10,500 had had ordinary garbage as their main food. The rest of the 25,000 hogs had been fed cooked garbage and since they had virtually no trichina infection were not included.

Skin Milk

"In recent years, the tendency of farmers to deliver whole milk instead of cream to the creamery has increased markedly, with the result that larger and larger quantities of skin milk must be disposed of by the creamery operator," says O. E. Reed, Chief of the Bureau of Dairy Industry in September's Agricultural Leaders' Digest. "The disposal of whey has long been a source of annoyance and expense to the cheese maker...Fundamental research work of the Bureau of Dairy Industry scientists, some of which was done long ago, has contributed much useful information concerning ways to utilize skin milk, buttermilk, and whey. Bakers have been using large quantities of skin-milk powder for a number of years, and recently the Bureau's studies have enabled the processors to package skin-milk powder in small consumer-size units for home cooking. Of the nearly 46 billion pounds of skin milk available for processing annually, about 38 billion is used as livestock feed, less than 7 billion is used for human food, and about 1 billion for making casein. Casein has many uses in the plastic arts, but most of the 35 million pounds made in this country is used by the paper-coating industry...These are but a few of the new achievements in the utilization of milk byproducts made by the Bureau of Dairy Industry and others during the past few years."

DAILY DIGEST

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Vol. LXXIV, No. 51

Section 1

September 14, 1939

WALLACE ON WAR PROFITS

Any expectation that farmers would profit, in the long run, from a major war was rejected yesterday by Secretary Wallace, in discussing this topic at his press conference, on the basis of experience showing that temporary profits are invariably wiped out by the costs of realignment of production in peace-time. "The farmer's attitude against war is traditional," he went on. "Then, too, his memory is still fresh about what happened to farm profits after the last war. If the memory is not fresh it should be recalled. The triple A pictures the whole problem and as an example we should keep it as bright and shining as possible. Mr. Wallace's remark was made in the midst of a talk in which he expressed the hope that agricultural prices might go higher, and more nearly approach parity, but in which he also coupled the hope that rises would be based only on the sound basis of supply and demand and not on speculative possibilities. (New York Times.)

N.Y. MILK REFERENDUM

Secretary of Agriculture Henry A. Wallace announced yesterday his approval of proposed increases in the prices to be paid to dairy farmers who supply the metropolitan area of New York with milk and said that a referendum would be taken at once among the 60,000 farmers in the New York milk shed and the distributors for the metropolitan area. The referendum vote on the proposed changes in the contract prices under the Federal Marketing Law will be taken among the producers in New York, and part of Pennsylvania, New Jersey, Connecticut, Massachusetts and Vermont. Ballots must be submitted by September 22. A vote will also be taken among the handlers in the New York City area, numbering less than 200. (New York Times.)

TOBACCO CONTROL

The Agricultural Adjustment Administration announced yesterday that plans were being made to hold a referendum on control of the 1940 flue-cured tobacco crop through use of marketing quotas. The referendum was announced following a meeting of farmers, warehousemen and businessmen in the Department. The growers recommended that the referendum be held between September 30 and October 7. (Washington Post.)

NO CORN REFERENDUM

No referendum will be held this year on corn-marketing quotas for the 1939 crop, Secretary Wallace announced yesterday, thereby making 1939 the second year in which no referendum has been held on this crop. The decision was based, the Secretary said, on the finding that an indicated crop of 2,523,000,000 bushels, combined with a carryover of 470,000,000, falls below the total of 3,030,000,000 bushels that would make a referendum necessary. (New York Times.)

**Weather
and Crops**

The continuation of inadequate rainfall during the week in the Great Plains, attended by extremely high temperatures, aggravated an already serious condition and soil moisture is now badly depleted from Oklahoma to Nebraska, as well as in adjoining areas, notably in Missouri and western Arkansas. Throughout this region late crops were badly burned, forage and pastures dried up, and stock water and wells were failing. Outside operations were seriously impeded by the heat and the hard dry soil. Farther east, from the Ohio Valley southward, an increasing need for rain is becoming apparent, with many fall operations delayed. However, the dry weather was very favorable for harvesting operations, while haying proceeded rapidly. In the principal Winter Wheat Belt fall plowing and seeding are practically at a standstill as the soil is generally too dry for this work. In more northern portions, however, there were some scattered reports of plowing and seeding, while in Minnesota the ground is reported in good condition and work is progressing satisfactorily. Corn progresses favorably in most of the Ohio Valley, although the late crop was unfavorably affected locally by the absence of rainfall and high temperatures. In Kansas practically all corn in the western part has been cut for fodder and silos, but fair to good condition is noted in some more eastern localities.

In Iowa the unprecedented heat, in combination with a 3-week drought, caused serious deterioration of late corn in about one-fourth of the acreage and reduced yields elsewhere. However, one beneficial feature was the rapid maturity of the bulk of the crop, as more than four-fifths is now safe or twice as much as is normally safe at this date; moisture tests indicate that some may be dry enough to crib by the end of this month. Conditions were generally favorable in the eastern portion of the Cotton Belt, but this crop was unfavorably affected by the hot, dry weather in western and northwestern parts. The week was too dry and hot for late gardens and truck in portions of the Southeast, and considerable deterioration occurred. In portions of the Lake region and locally to eastward, beneficial rains helped all crops; locally the rains were heavy enough to cause some damage to fruit and other crops. Late tobacco made poor growth in Kentucky and is suffering from lack of rain in Tennessee; cutting is well along in Ohio and some hail damage to the crop was reported in Maryland. The citrus harvest is still under way in California and citrus fruit are coloring and sizing well in Florida. Stock water is low in portions of Oklahoma, Montana, and Missouri, and there are some reports of trees dying in portions of Arkansas. Livestock are in generally fair to good condition in much of the West, though there were some complaints of poor condition in portions of the Southwest.

Drought Reseedings Seed for reseeding more than 200,000 acres of drought-damaged hay and pasture land has been furnished to nearly 29,000 farmers in the Northeastern drought area, it was announced Monday by the Agricultural Adjustment Administration. More than half of these farmers are in New York and most of the others are in Pennsylvania. Seed has been furnished also in drought areas of New Jersey, Connecticut, New Hampshire, and Vermont. It has been supplied only for reseeding in cases where seedings made last spring were destroyed. The cost of the seed had been defrayed by the AAA. Officials of the Northeast Division point out that new seedings will augment supplies of hay and forage next year and protect the soil from erosion this winter.

Stamp Plan For Low-Income Class T. A. McNeal in an editorial in *Kansas Farmer* (September) says: "The Department of Agriculture is fathering an interesting experiment with the double purpose of helping the low-income class to reduce the cost of living and at the same time reduce the surplus and stabilize prices of farm products. The experiment is being tried in a large number of places, one being at Shawnee, Oklahoma, a little city of 23,000 population. Privately-employed workers with incomes of less than \$19.50 a week, married and with 2 or more dependent children, are eligible to share the plan's benefits. A family of this low-income class buys orange-colored food stamps good at face value at the grocery stores. For each dollar's worth of these orange-colored stamps the purchaser is entitled to 50 cents worth of blue stamps free. These stamps can be exchanged at prevailing retail rates for the government-designated surplus food. The result, according to food distributors, has been a substantial increase in the consumption of these government-listed foods..."

New Steel Grain Bins The Department has announced the purchase of 6,400 steel grain bins with a storage capacity of 13,526,000 bushels. These bins are in addition to the 25,800 bins with a capacity of 43,900,000 bushels, for which contracts were let during August. The bins are being purchased by the Commodity Credit Corporation to store at country points corn which may be delivered in settlement of corn loans which matured August 1. Officials announced that about 3,000 bins from previous purchases have already been shipped to Iowa, Illinois, Missouri, Minnesota, South Dakota and Nebraska.

Community Forest The city of Seattle, Wash., which owns and operates the Nation's largest community forest -- 62,000 acres -- expects a net return of \$2.25 per acre a year after all operating expenses are paid, reports the United States Forest Service. Purchased 39 years ago to protect the Seattle watershed, the forest has already paid back on the sale of wood products more than \$1,000,000-- which has been sufficient to retire all debt and take care of all expenses.

**Position
of Wool**

The New York Journal of Commerce (September 11) reports that the wool industry is affected in a number of ways by the war in Europe. Manufacturers here are largely relieved from the competition of imported woolen goods, which had been coming into this country in greatly increasing quantities lately as a result of the lower duties contained in the reciprocal trade treaty with Great Britain. There are good reasons for believing that this country will not suffer from a shortage of wool comparable to that which developed during the World War period. While domestic production is still insufficient to meet requirements, our production has greatly expanded since the World War period, while wool consumption per capita has declined. In 1938, domestic wool output amounted to 89 percent of total of apparel wool consumption in this country, but on the average only about 75 percent of domestic requirements are produced in this country. Furthermore, it is unlikely that American woolen mills will receive any such large volume of orders from abroad as they obtained during the World War period. The woolen industry in the United States should thus be affected to a considerably lesser extent than was the case during the World War.

**New Wheat
Variety**

A Science Service report to the New Orleans Times Picayune (September 5) says: "A triple-resistant variety of wheat, able to defy three of wheat's worst natural enemies, will be ready for distribution to growers in 1943, Professor Fred N. Briggs of the University of California promised before the meeting of the Seventh International Congress of Genetics at Edinburgh. The wheat breeder is able to make this prediction with confidence that when the time comes he will deliver the goods because of the method used in producing the new variety, Professor Briggs explained. By crossing a resistant strain with a productive but non-resistant one, and then back-crossing the hybrid offspring with one of the parent stocks, the desired character of the parent can be stabilized or fixed in the new variety. Back-crossing thrice repeated has already produced a wheat resistant to both bunt and Hessian fly in the California breeding fields. Seeds of this variety will be available to California growers in 1940. The triple-resistant wheat now in process of creation will require five back-crosses. Back-crossing is also being used for the production of hull-less and awn-less barleys. A number of other crops are at present under experiment, Professor Briggs stated."

Soil Science (September) includes the following articles:

- "Properties of Soils from North American Arctic Regions" by Irvin C. Feustel and M. S. Anderson of the Bureau of Plant Industry, and A. Dutilly;
- "Minerals Present in Soil Colloids: I. Descriptions and Methods for Identification" by Sterling B. Hendricks of the Bureau of Agricultural Chemistry and Engineering, and Lyle T. Alexander of the Bureau of Plant Industry;
- "II. Estimation in Some Representative Soils" by L. T. Alexander, and R. A. Nelson of the Bureau of Agricultural Chemistry & Engineering.

DAILY DIGEST

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Section 1

September 15, 1939

CUBA ON SUGAR QUOTA Cuba will make every effort to obtain restoration of the benefits lost by Cuban sugar through the cancellation of the sugar quota system by President Roosevelt, the Cabinet agreed at a special session late Wednesday afternoon, reports a special cable to the New York Times from Havana. "It was agreed that the Secretary of State shall continue and intensify necessary efforts to obtain from the President of the United States restoration to Cuban sugars of the benefits of which they have been deprived," the official statement read.

BRITISH BUYING PLANS "It is reported that the British government is preparing to handle war purchases in the United States through a joint British and French agency or agencies....," says an editorial in the Washington Post (September 15). "It has been officially announced that the British food ministry will have sole authority over the importation of all essential foodstuffs. It will also be responsible for domestic price control measures and for the organization and control of distribution. Centralized buying of certain important staples acquired abroad is contemplated, and buyers have already been designated. According to information received from the American Embassy, plans are also under way for acquiring close to a year's supply of essential food imports, while prices are comparatively reasonable. These supplies can later be shipped as needed and as facilities for transportation become available....This time profiteers will not find buyers such easy prey. Furthermore, there are a number of factors, apart from better buying organization, which will militate against excessive price increases. For instance, the U.S. Department of Agriculture, in an official release outlining the British plans, states that 'reliable sources indicate that sharp curtailment (of consumption) through the medium of rationing cards is likely to be ordered sooner or later in meats, fresh fruits, imported luxuries and possibly sugar and fats.'...."

COTTON LIMITS Hearings to establish limits for speculative trading in cotton, as authorized by the Commodity Exchange Act, will be held in New York City on October 9 and in New Orleans on October 16, the Department of Agriculture announced yesterday. They will be conducted by Dr. J.W.T. Duvel or J.M. Mehl, chief and assistant chief, respectively, of the Commodity Exchange Administration. (New York Times.)

Small
Farms

An editorial in the Michigan Farmer (September 9) says: "There may have been a time when the family sized farm did not seem economically sound to some of our leaders, and the future appeared somewhat hazy, but a change has come about during the last few years that has improved the outlook and the farm that can be operated without outside labor, at least most of the year, has been placed in the spotlight. Manufacturers are giving increasing attention to equipment that is suited to such farms and the specialists of our agricultural colleges and the federal departments are devoting more time and study to programs that fit into this type of farming..."

Use of
Fertilizer

"As a part of their program to increase the productivity of their land, to increase their profits, and to prevent soil erosion, the farmers of the United States used 7,504,000 tons of commercial fertilizer last year," says Kansas Farmer (September 9). "With the exception of 1937, this was by far the largest tonnage for any year since 1930. Although total tonnage for the entire country fell off by about 8 percent, several of the western states reported increases in 1938. The trend of consumption in that region is rising more rapidly than in the older fertilizer-using areas in the East and South. There has been a steady increase in the amount of plant food in a ton of fertilizer. The farmer benefits by this change and it is to his advantage to buy the higher analyses."

Soil Program
Value Tested

"Much is heard these days about the value of adding fertilizers to increase productivity of soil," reports the Bloomington Pantagraph (September 6). "This was proven in a wheat experiment on two neighboring fields in Montgomery county, Illinois. The test was launched in the fall of 1938 under the direction of the county farm adviser and L. B. Miller, associate in soil experimental fields of the U. of I. college of agriculture. The soil type in each field under test was Harrison silt loam. One field had been limed and a good rotation, including red clover, had been practiced for many years. The other field was never limed and the recent crops were chiefly corn, soybeans and wheat. Different amounts of various phosphates and of mixed fertilizers were drilled with wheat in a similar way in each field along with numerous untreated strips. Although the treatments gave slight increases in each field, the outstanding result was the difference between the fields themselves. The poorer one--the one to which no special care had been given, either in fertilization or rotation of crops--produced 22 bushels per acre. The good one yielded 38 bushels per acre. The difference of 16 bushels per acre is more than twice as much as the increase resulting from any fertilizer or phosphate treatment in either field...In addition, the limed field now has an excellent stand of red clover."

Course in Industrial and Engineering Chemistry (September 10)
Plastics reports: "The phenomenal development of the plastics industry and the great interest manifested in it by industrialists, chemists, and research workers have prompted the University Extension Division of the Massachusetts Department of Education to sponsor a course in the Industrial Chemistry of Plastics, at the Massachusetts Institute of Technology beginning November 8, 1939... The purpose of this course is to bring out in a clear, practical, and nonmathematical manner the underlying similarities in properties and behavior of such superficially diverse substances as glass, the resins (both natural and synthetic), leather, rubber, plastic clays, and the like. The course will be broad, basic, and fundamental in an attempt to establish firmly the general ideas underlying the correlation of physical and chemical behavior with internal structure..."

Regional "Senate Document No. 65 is a publication of 430
Research pages, comprising the letter from the Secretary of
Laboratories Agriculture transmitting a report of the survey made by the Department of Agriculture relative to the four regional research laboratories which have been established by an act of Congress," says an article in Industrial and Engineering Chemistry (September 10). "The report, prepared under the direction of a committee of which H. T. Herrick served as chairman, is a valuable document, for it brings together for the first time a comprehensive discussion of research now in progress on agricultural products and by-products looking to industrial utilization and proposed research programs dealing with the several farm commodities. The information presented results from an intensive study of field surveys conducted by a trained staff in which the representatives of some 1300 research institutions, including approximately 1100 industrial research laboratories, discussed the problems confronting the department, not only in establishing the four regional laboratories, but in selecting the initial lines of research which should engage their attention. The hearty cooperation extended to the investigators has made possible the present volume. We know of no other place where similar information has been brought together in such useful form..."

Price Rise Among the beneficiaries of the speculative advance
Helps AAA in commodity prices is the corn loan program of the
Corn Program Agricultural Adjustment Administration. In addition to the satisfaction of seeing its huge paper losses on corn loans cut about in half by the price advance the AAA appears likely to escape what promised to be an overwhelming flood of old corn this fall. Recent surveys indicate that a large number of farmers have changed their minds about re-sealing this corn and that well over half of the 257,000,000 bushels on which the government has loans outstanding will be held by the producers. A month ago it appeared that as much as two-thirds of the loan corn would be turned over to the government and that even with its newly purchased bins the AAA would have difficulty in finding sufficient storage space to handle the unwanted corn. (Wall Street Journal, September 14.)

Plenty
of Meat

"There is no cause for alarm in the current shortage of meat in Packingtown and retail butcher shops, market experts at the Chicago stockyards advised recently," reports the Chicago Tribune (September 10). "The acute situation which has existed in the live stock trade and meat markets since the declaration of war in Europe is only temporary, the result of hysteria and the belief that abnormally high prices were a certainty for the near future, they agree. There was evidence late last week that trading in both meat and live stock markets was settling to a more normal basis. Much of the advance in prices was attributed to the fact that farmers withheld shipments of meat animals for a few days to await the effects of the war on the general price level. Packers had small stocks in cold storage and were unable to offset this sudden drop in available slaughter supplies... The department of agriculture reports that prospects are that meat production during the next few months will exceed the output last year by a wide margin. The latest survey of feedlots in the corn belt discloses 16 percent more cattle on feed as of August 1 this year than on the same date last year. Only a small part of the big spring pig crop has been sold. The government placed this year's crop 20 percent above a year ago, the third largest since 1923. The lamb crop is 1 percent smaller than the record 1938 crop, but larger than for any other year on government records..."

AAA Farm
Education

If the opinion of the Alabama farmer is a good yardstick, the best work of the Triple-A has been toward "educating farmers to the need of saving and increasing fertility of the soil." County AAA committeemen, polled recently, gave that as their view, and ranked second in importance the program's stress on diversified farming and livestock development. Third most beneficial aspect of the program, these men said, was the development of a "more cooperative spirit among farmers." (Birmingham News, September 9.)

Small-scale
Irrigation

Selection of a new California area for small-scale irrigation and spring development under the water facilities program was announced recently by the Department of Agriculture. The area, to be known as the Sierra Valley Water Facilities Area, embraces approximately 357,000 acres on the watershed of the Middle Fork of the Feather River and its tributaries above its confluence with Grizzly Creek in Sierra, Plumas and Lassen Counties. Development work is to begin immediately.

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DAILY DIGEST

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Section 1

September 18, 1939

EUROPEAN CROPS

Reports on European crop conditions received in the Office of Foreign Agricultural Relations point to average or better than average yields this year, though below those of 1938, for most of the important food and feed crops grown in Europe, according to a report by that office to the Department of Agriculture. In addition, many countries have been laying up reserve stocks for several months. Consequently, most European countries should be able to meet their essential food and feed requirements for at least several months. (New York Times.)

COTTON QUOTA

Secretary Wallace last Friday issued a proclamation limiting the unrestricted sale of cotton from the 1940 crop to 12,000,000 bales, the same as was set last year. Before becoming effective, however, the quota must be ratified by a two-thirds vote of eligible cotton growers who will be polled in a referendum on December 9. The same quota, voted on similarly last December for the 1939 marketing year, was approved by 84.1 percent of the growers. (New York Times.)

SHIPMENTS TO CUBA

Farm and factory products of the United States, aggregating more than 350,000 tons, were shipped to Cuba in the first six months of this year, it was reported Saturday by the Cuban Committee of the National Foreign Trade Council. The committee's semi-annual analysis showing the benefits accruing to agriculture and industry from trade with Cuba disclosed that while the total for the first half of the year was slightly lower than for the corresponding period last year, a substantial gain in June promised to recoup the small loss. (Press.)

FOOD ORDER STAMP PLAN

Selection of Springfield, Illinois, as the seventh city in which the Food Order Stamp Plan for distributing surpluses through normal channels of trade will be put in operation, was announced Saturday by Secretary Wallace. The present population of Springfield is estimated at 90,000. There are 6,000 relief cases in the city, representing a total of about 15,500 individuals. Actual operation of the plan in Springfield is expected to start within about a month.

Better
Grasses

Grass breeding is "catching up" with research on other economically important plant crops, reports M. A. Hein, pasture specialist of the Federal Bureau of Plant Industry. Grass long has been recognized as the cheapest of livestock feeds, but until recently little attention was given to better grass strains through breeding. Department forage specialists cooperating with various State experiment stations have shown that grasses can be improved by breeding as much as field crops. To carry out grass studies as rapidly as possible, the country has been divided into regions where there is a similarity in the problems and consequently in the methods of attack. Adaptation studies of large numbers of domestic and foreign grass species are made at nurseries in the various regions. In this preliminary work studies are made of the palatability and the reaction of the introduced grasses to grazing. As far as possible those that fail to show promise in this initial phase of the breeding program are eliminated.

Wilt-Resistant
Alfalfa Strains

Ten new strains of wilt-resistant alfalfa are being increased this year, and it is hoped that sufficient quantities of seed of the most promising strains will be available for limited distribution by 1942, reports H. L. Westover, alfalfa specialist of the Federal Bureau of Plant Industry. Before wilt became serious alfalfa stands lasted 6 to 12 years and longer in regions best adapted to the crop. Since the disease put in its appearance about 15 years ago, it is not unusual for fields to fade out in 2 to 4 years, says Mr. Westover. None of the usual cultural methods helped control the wilt, so Department scientists turned to breeding for wilt resistance. The first job was to get breeding stock resistant to wilt. These were found by Mr. Westover on plant exploration trips to Turkistan in 1929 and 1934. Here, where alfalfa has been grown for centuries, little wilt was found. Many hundred strains were studied since the first importations were made. In the cooperative work at Lincoln, Nebraska, these have been weeded out to the present 10. This number probably will dwindle down to two before any are released for commercial growing.

Seedless
Fruits

An Associated Press report to the New York Times states: Seedless tomatoes, which could be eaten by persons now allergic to tomatoes, and seedless watermelons, whose utility is obvious to any one who has flicked the seeds from a slice, may well be on the fruit stands of the future, a University of Michigan scientist told the American Chemical Society meeting at Boston. Dr. Felix G. Gustafson disclosed recent research in developing seedless fruits through the use of manufactured plant growth hormones. Seedless peppers, Summer squash, eggplant fruits, cucumbers and tobacco already have been produced experimentally by treating plants with chemicals resembling nature's growth hormone. But so far the method has been too expensive for commercial application.

Vitamins The smallest plants, no less than the largest for Microbes animals, must have their vitamins, hormones and other minutely concentrated but physiologically powerful substances if they are to live and grow, it was made plain in discussion before the Third International Congress for Microbiology. Not less than a dozen such substances are needed, said Dr. William J. Robbins of the New York Botanical Garden in New York. To a very large extent, microscopic plants and full-sized animals need and use the same growth-promoting substances. One such substance, only recently discovered, was given the name "coenzyme R" by Dr. Franklin E. Allison and Francis W. Minor of the U. S. Department of Agriculture. It has been found indispensable for the growth of the nitrogen-fixing bacteria that live in the roots of clover, peas and related plants. The bacteria need very little of it; they would grow and multiply in solutions containing as weak a dilution as one part in a million. But that much at least they had to have in order to grow at all. Another nitrogen-fixing bacterium, Azotobacter, that lives free in the soil instead of in plant roots, has been found to require minute traces of molybdenum, the same metal that is used in hardening modern high-grade steels, and even smaller quantities of tungsten, the metal used in electric lamp filaments. Researches establishing these facts were reported by Drs. Dean Burk and Kenneth Horner of the U. S. Department of Agriculture. (Science News Letter, September 16.)

One-Variety Otis T. Weaver, Farm Credit Administration
Cottonseed writing in News for Farmer Cooperatives says: "One-
Cooperative variety cotton communities are numerous in all of the cotton-producing States; farmers' cooperative associations are likewise found in all of the cotton States; a group of California cotton growers put the two together and are producing one-variety cottonseed for planting purposes and distributing it cooperatively...The membership of this association is made up of some 150 farmers. Each year about 10 of these, with a total of about 800 carefully selected acres, plant 'parent seed' that has been grown under the direct supervision of the U. S. Cotton Field Station at Shafter, California and produce some 400 tons of 'yellow label' seed. These 400 tons of seed are planted the following year by the other 140 members of the association on about 19,000 acres and produce between 5 and 6 thousand tons of 'blue label' seed. This 'blue label' seed may then be purchased the following year by any cotton grower in the State. If there is a surplus of this seed over State requirements, it is offered to cotton growers in other States. 'Blue label' planting seed has been shipped to four other States, and small quantities to five foreign countries -- China, Brazil, Italy, Turkey, and San Salvador -- for experimental purposes. The management of the association is under the supervision of a board of seven directors, all of whom are cotton producers, assisted by five advisory directors, one each from the United States Department of Agriculture; the College of Agriculture, University of California; the California State Department of Agriculture; the California State Farm Bureau Federation; and the California State Grange..."

Leadership in Chemistry Science (September 15) reports that: "Leadership in chemistry throughout the world is now in possession of the United States, according to a report submitted to the American Chemical Society by Professor E. J. Crane, of the Ohio State University. Germany, which ranked first during the World War period and even a decade ago, has now dropped to third place with Great Britain second. Russia and Japan show striking gains. English is predominantly the language of science, the United States and England accounting for 40 percent. of all scientific periodicals published. Chemical patents account for much of the leadership of the United States. During the last five years U. S. chemical patents have increased fifteen percent. in number over the preceding five years. During this same time British chemical patents have declined twelve percent., French chemical patents have decreased twenty-three percent. and German chemical patents have dwindled to thirty percent. of their former number."

Forest Fire Insurance "Plans for forest fire insurance are being perfected by economists attached to the U. S. Forest Service which should bring at least financial relief to the estimated \$43,000,000 lost annually throughout the nation from this cause," says an article in Science (September 15). "An unquestionably sound basis' for insuring standing timber against the menace of fire has been worked out in a report prepared by H. P. Shepard, of the division of forest economics, after a three-year study. The northeastern states and the Pacific Coast lumbering area have already been surveyed in the research study of the feasibility of the plan. A nation-wide expansion is believed possible. For the northeastern area it is estimated that premiums of only 13.5 cents per \$100 of valuation would be needed to make the plan satisfactory."

Australian Wheat Crops A special report from Melbourne to the Wall Street Journal says: For the remainder of the war all of Australia's wheat crop will be purchased by the Commonwealth government and marketed through a compulsory pool. The Australian government will acquire immediately all wheat stocks and supplies which will be sold at ruling prices so that farmers returns will be equalized. This drastic action was contemplated to deter speculation in wheat so as to protect farmers who sold their wheat to speculators at low prices before the outbreak of the war.

Use of REA Lines A recent survey by the Rural Electrification Administration of 74 rural electric line projects showed that, after an average length of electric service for only 6 months, 86 percent of the new users had purchased radios, 81 percent had purchased hand irons, 47 percent had purchased washing machines, 25 percent had purchased refrigerators, 17 percent had purchased water pumps, and 9 percent had purchased small motors.

DAILY DIGEST

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Section 1

September 19, 1939

FINNISH EXPORTS TO U.S.

No interruption in trade between Finland and the United States is expected as a result of the European war, Hjalmar Procope, Finnish Minister to the United States, said yesterday. Finland is determined to maintain "strict and unyielding neutrality" in cooperation with the other Scandinavian nations, Procope stated. Although foreign trade is now subject to government control, the regulations are "purely formal" and will not put any "special difficulties" in the way of trade with America, he said. (Washington Post.)

GRADUATE SCHOOL

The Agriculture Department graduate school will open its 1939-40 session next Monday, offering more than 150 courses in subjects ranging from calculus to finite differences, to lectures on Russian literature and glass blowing. Distinguished lectures during the session will include Dr. Harold Jeffreys and Dr. John Wishart, both of Cambridge. The school now is endeavoring to obtain for a series of lectures Dr. Dufrenoy, of Paris, who will speak on the cytology of the cells. G. W. Robinson, professor of agricultural chemistry at the University College of North Wales, is listed. Registration for the first semester should be completed before September 21. (Washington Post.)

TREES PLANTED

Farmers in thirty States planted more than 6,000,000 trees in windbreaks last year under the State cooperation provided by the Clarke-McNary law, the Department said yesterday. The plantings are in addition to those made in the prairie-plains States under the Prairie States Forestry Project of the WPA, which has established more than 10,800 miles of field windbreaks on more than 18,000 farms since 1935. Clarke-McNary plantings last year cost the Federal Government \$75,286 and the cooperating States \$306,910. The States distributed the trees at cost or less to encourage farm forestry. (New York Times.)

Flavor
of Milk

"In discussing the subject of 'Judging Market Milk', C. J. Babcock, of the Bureau of Dairy Industry," according to an article in Southern Dairy Products Journal, (September) "states, in part: The abnormal flavors in milk are usually due to one of the following four causes: (1) Physical condition of the individual cow, (2) highly flavored feeds, (3) odors absorbed by the milk after production, and (4) biological changes in the milk. For the purpose of determining the source of abnormal flavors these four causes may be divided into two groups, for those flavors caused by the physical condition of the cow and by highly flavored feeds are present as soon as the milk is drawn, whereas those caused by absorbed odors and biological changes do not appear until some time has elapsed after the milk has been produced. Those abnormal flavors caused by biological action and by highly flavored feeds are the most common. Both of these causes, as a rule, are easily controlled. Where we have biological action causing abnormal flavors it indicates that the milk has not been produced and handled in a sanitary manner. Feed flavors in milk may be largely controlled by feeding all highly flavored feeds after milking -- never just before milking..."

Sunlight and
Agriculture

Scientists in Honolulu are now working on a project which promises to bring the sunlight factor within the realm of predictability for farming. Their experiments indicate that sunlight and its effects upon agriculture can be measured with a fair degree of accuracy. The implications of such a discovery for agriculture are far-reaching. The inquiry grew out of experiments which have long been conducted in the water-absorption rate of growing cane. These experiments revealed that there is a direct and calculable relationship between the intensity of solar radiation and the "thirst" of the cane. Indeed, so sensitive is the plant to the sun that a mere wisp of cloud, passing across the face of the sun, will definitely affect the water consumption of the cane. After sundown, as every farmer knows, the water absorption rate of a plant will quickly diminish. But it is not so generally known that there are similar changes in the rate of "drinking" during the daylight hours. These changes, it was learned, bear a distinct relationship to the variation in the intensity of the sun's rays. From such a discovery, it naturally followed that if sun rays could be measured, agriculturists would be able to plan production with an almost mathematical certainty of plant growth. (Scientific American, October.)

"The Future Working Population" by T. J. Woofter, Jr., Farm Security Administration is one of a number of articles in Rural Sociology (September). This issue also contains "The Concept of Plane of Living and the Construction of a Plane of Living Index" by Walter C. McKain, Jr., Bureau of Agricultural Economics.

Preserved in Plastics Two methods of preserving indefinitely in their natural colors such agricultural specimens as leaves, flowers, fruits, seeds, insects, and other biological material have been developed by chemists of the United States Department of Agriculture. The processes, while supplementing each other, have different fields of application -- one for dried and the other for fresh material. Due to the expected permanence of specimens preserved by either method, excellent records of both healthy and abnormal plants and insects may be made available for research and study. Although numerous specimens have been prepared by both methods, there are a number of difficulties to be overcome before the final methods can be released for general use. (Scientific American, October.)

Tartar Emetic Analysis "Attempts to determine the quantity of tartar emetic remaining on citrus foliage during a spraying program led to the realization that in insect control it is sometimes more important to know how the poison is distributed than to know the exact amount present on a given surface," says Donald Starr, Bureau of Entomology and Plant Quarantine, in Industrial & Engineering Chemistry (September). "A simple and rapid analytical method was needed if the large number of analyses required in control work were to be handled. A sensitive iodine-starch test paper was devised which gave a picture of the distribution of the tartar emetic over the leaf surface...The iodine-starch paper used was dark blue or brown, and the reaction with tartar emetic reduced the iodine and whitened the paper. A semiquantitative estimation of the tartar emetic was made possible by preparing, as a standard of comparison, small slips of paper containing a known quantity of tartar emetic on the surface. The tartar emetic paper and the citrus leaves were tested with the same iodine-starch paper, and by roughly integrating and comparing the whitened area due to the standard with that due to the unknown the approximate quantities of tartar emetic on the citrus leaves were obtained. The test may also be used for roughly estimating tartar emetic residues on citrus fruit surfaces..."

Industrial & Engineering Chemistry (September) also contains an article, "A Device to Prevent Bumping and Promote Boiling" by S. Palkin and T. C. Chadwick of the Bureau of Agricultural Chemistry and Engineering.

Turkey Grading Schools The Agricultural Marketing Service News (September 12) reports more turkey grading schools are scheduled to be held this year than for any year since the work was started in 1929. These grading schools are usually held near the center of large turkey producing areas, and an attempt is made to conduct at least one school in each of the heavy turkey producing States that are cooperating with the United States Department

of Agriculture in carrying on the grading work. The schools are primarily for the training of those who are to be licensed to grade turkeys in accordance with the U. S. standards, but are open to anyone interested in turkeys. A list of the schools and their schedules is included in the report.

Wheat Crop The 1939 wheat crop of Canada, harvesting of which in Canada is now practically completed, is estimated by the Dominion Bureau of Statistics in Ottawa at 449,000,000 bushels, the fourth largest crop on record in that country, according to a report recently by the Office of Foreign Agricultural Relations. Last season's crop amounted to only 350,000,000 bushels. Only three times in the history of the Canadian wheat industry has the crop exceeded this year's level. In recent years, 1933-37, the crop has averaged only 248,000,000 bushels because of drought.

British Farm Land Emergency regulations recently issued under the National Defence Act of the United Kingdom have placed the entire agricultural industry of that country under the control of the British Minister of Agriculture during the war, according to a cable to the Office of Foreign Agricultural Relations from the American Embassy in London. The objective is to assure that farm land in the United Kingdom will be used to its maximum efficiency for the production of essential foodstuffs. The program calls for placing in cultivation an additional 2,000,000 acres of farmland before December 31, 1939. To expedite the realization of that objective the Government will pay a subsidy of \$8.08 per acre on approved grassland that is ploughed up before the end of the current year. Farmers are being urged to sow as much winter wheat as possible and to make large increases in the acreage devoted to oats, barley, flax and potatoes next spring. In thus urging farmers to go on a war basis, it is obvious says the Office of Foreign Agricultural Relations, that the Government hopes to bring about the necessary shifts in agricultural production much more rapidly than during the last war.

Grape Hybrids The New York Times (September 15) reports that for forty years plant breeders at the State Experiment Station in Geneva, N. Y., have been striving to combine the fine quality and good flavor of the European or "California" type of grape with the hardiness, vigor and disease resistance of the native grape, with the result that their efforts are beginning to bear fruit literally in the form of promising new varieties that combine the best of these two types and that are now on trial in many grape-growing regions. More than 25,000 grape seedlings have been grown in the station grounds during this period. Most of these have come from controlled crosses and represent more than 1,000 different parental combinations.

DAILY DIGEST

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Vol. LXXIV, No. 55

Section 1

September 20, 1939

WALLACE ON "PROFITEERING" Secretary Wallace asked farm food and clothing industry leaders yesterday to cooperate with the Government to prevent "profiteering" during the European war. The request came at a meeting of the agricultural advisory council, composed of 30 farm and business leaders. Wallace said that unless there was such cooperation, detrimental conditions might arise, and that the Government wished to avoid "regimentation" of the food industry. Various members of the council stated in response that, because of industry organizations, the food and clothing trades were in a much better position to prevent profiteering than during the World War. (Associated Press.)

VIRGINIA TOBACCO REFERENDUM An Associated Press report from Danville, Virginia states that fifteen hundred Pittsylvania and Halifax County tobacco growers in a mass meeting in Danville Monday voted overwhelmingly in favor of a referendum on crop control for 1940. The meeting went on record as favoring limiting next year's entire crop to 665,000,000 pounds. (Evening Star.)

SCIENTISTS' LANGUAGE An internationally known philosopher and psychologist has called upon scientists to speak and write "in the plain language of plain people." "There is no certainty that a professional expression is more likely to clarify than to mystify," declared Dr. Horace Kallen of New York's School for Social Research, "and most of the time it mystifies. It mystifies the hearer, whatever satisfaction it may give the speaker." One of 200 American and European investigators who attended the fifth International Congress for the Unity of Science at Harvard, Dr. Kallen, in an interview, characterized a move of the Congress to devise a "general language" for all science as "a move toward even greater technicality of expression than now exists." Standardization of language, he added, would hinder, rather than help, any unifying movement for science because "the progress of science depends on the freedom of scientists in their respective fields." (New York Times.)

Proved
Sires

Dairy breeders are saving the more promising bulls and are discarding the poorer bulls as soon as dairy herd improvement records reveal their inferiority, the Bureau of Dairy Industry commented yesterday in connection with the publication of the third annual list of sires proved in dairy herd improvement associations. This list, Miscellaneous Publication 353, which may be purchased from the Superintendent of Documents, Washington, D. C., at 15 cents a copy, includes the records of 1348 sires proved between April 1, 1938 and April 1, 1939. In making public these tabulated records of individual animals the bureau emphasizes that a "proved" bull is not necessarily a good bull. "A sire," the publication says, "is termed a proved sire when the production records of at least five of his unselected daughters have been compared with the production records of their dams. Such comparisons may show that a sire has transmitted high-, medium-, or low-producing ability to his daughters. To say that a sire is a proved sire, therefore, does not necessarily mean that the sire is a valuable sire; it merely means that the production records of five or more of his unselected daughters and their dams have been compared on a uniform basis." Although many of the sires with excellent records are now dead, the information published is regarded as valuable because they may have sons living and available for breeding.

Heartworm
Infestation
of Dogs

Science Service reports that a new drug to combat the rapidly spreading heartworm infestation of dogs will shortly be made available to veterinarians. The drug, antimonial-III catechol thiosalicylic acid sodium, is the result of three years of intensive research by James A. Austin and Dr. Harold P. Brown of Kansas City, Missouri. Heartworm infestation of the dog is a unique disease because living adult worms, *Dirofilaria immitis*, 8 to 12 inches long, situate themselves in the right heart. Under treatment the adult worms are slowly killed by gradually building up a concentration of trivalent antimony in the blood stream of the dog. Treatment of the condition involves a series of graduated daily doses of the drug administered intravenously.

Vitamin K

The chemical structure of vitamin K has been discovered. Behind that simple announcement at the meeting of the American Chemical Society in Boston recently is the story of more, better, healthier babies, cleaner operations by surgeons with less risk, and help for one group of sick people whose blood does not clot in normal fashion. Vitamin K is a fat-soluble vitamin which in some yet undiscovered manner promotes the production of prothrombin, a constituent of the blood which enables it to clot. Until the discovery of how to make vitamin K synthetically the major source of this vitamin was in concentrates of alfalfa. Vitamin K concentrates have already been found to decrease greatly hemorrhages during operations. (Science Service, September 9.)

Migratory
Workers in
California

In an article in The New Republic (September 20), dealing with the migratory labor problem in California, Carey McWilliams, State Commissioner of Immigration and Housing, states: "...Governor Olson, however, is not only concerned with improving the functions of the social-service agencies concerned with migratory labor, but is committed to the idea of working out a long-range program looking toward the solution of the problem itself. One of his first official acts was to create a Commission on Reemployment to study the whole problem of relief. The work of this commission has a direct bearing on migratory labor, since the bulk of agricultural labor in the state is on relief for part of the year...Its report recommends that the Commission of Immigration and Housing be constituted as the State Housing Authority...One of the most important discoveries which the FSA has made is that the moment a migrant family can be taken 'off wheels' its annual income is increased approximately 20 percent. These families, in the words of an FSA official, are 'too poor to economize'; they spend a disproportionate amount of their income for gasoline and they are unable, since they are forever on the march, to can fruits and vegetables or to practice any of the ordinary economies of a settled farm family... The Commission will make recommendations on repatriating a large number of Mexican families. In general, the Mexicans have been displaced by the dust-bowl migrants, with the result that about 65 percent of the Mexicans are on relief for a considerable portion of the year. The Governor's representatives have conferred with President Cardenas and the Mexican government has agreed to submit a detailed plan for the repatriation, on a purely voluntary basis, of a large number of Mexican families..."

Uses of
Bacteria

That all bacteria are not associated with the ills of mankind, but rather that many kinds are essential to everyday living, especially to life on the farm, was set forth in one of the Geneva (N.Y.) Experiment Station exhibits at the State Fair in Syracuse. This exhibit contained an array of bacterial cultures growing on a gelatin-like media in test tubes and included a collection of the so-called chromogenic bacteria which produce brilliant pigments. Along with these living bacteria was a display of food products in which bacteria play an essential role, such as cheese, vinegar, pickles, sauerkraut and buttermilk, to mention a few. The role of bacteria in the soil was illustrated as well, together with their great significance to the farmer in the inoculation of legumes and the making of silage. "Agricultural bacteriologists are concerned with unraveling the complex relationships of bacteria in the soil, in the dairy, in the canning industry, in sauerkraut making, in a dozen commercial processes utilizing farm products, such as the cheese industry, to mention only one," said Dr. R. S. Breed, bacteriologist at the station, in commenting on the display. (New York Times.)

Civil Service Examinations The Civil Service Commission announces the following examinations: No. 103, unassembled; Principal Transportation Economist, \$5,600, Senior Transportation Economist, \$4,600, Transportation Economist, \$3,800, Associate Transportation Economist, \$3,200, Assistant Transportation Economist, \$2,600; Option fields: 1. Air transportation, 2. Highway transportation, 3. Inland waterway and coastwise transportation, 4. Ocean transportation, 5. Railroad transportation, and 6. General transportation; Bureau of Agricultural Economics, Department of Agriculture, Bureau of Economic Regulations, Civil Aeronautics Authority, Public Roads Administration, Federal Works Agency, Interstate Commerce Commission, and United States Maritime Commission. No. 104, unassembled; Principal Statistician, \$5,600, Senior Statistician, \$4,600, Statistician, \$3,800, Associate Statistician, \$3,200, and Assistant Statistician, \$2,600; Optional Subjects: 1. Economics, 2. Mathematics, 3. Public Health, 4. Sociology, 5. Social Service, 6. Public Administration, 7. Biological Science, and 8. Engineering and Physical Science. All applications must be on file with the Commission not later than the following dates: (a) October 16, if received from States other than those named in (b) (b) October 19, 1939, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

Portable Seed-Cleaning C. E. Skiver, Purdue University Agricultural Extension Service, writing of the advantages of portable seed-cleaning, in an article in *Better Crops with Plant Food* (August-September) says in part: "An accurate dust feed has been designed to feed the proper amount of disinfectant dust into the grain stream before it enters the rotating drum where it is thoroughly mixed with the seed. A measuring device to register the amount of grain cleaned for each customer has been placed in the grain line just below the intake. Conveyers have been so arranged that the grain line may be shunted around the cockle machine when this separation is not needed. As is generally the case, no custom or method of operation is readily adopted by farmers unless it has distinct advantages or merit. The portable cleaner and treater offers the farmer the services of cleaning and treating equipment he cannot afford to own. This service is given at his own granary door at a very reasonable rate made possible only by the volume the machine is able to reach during the season... The portable units start out from 5 to 8 weeks before seeding time and, by going direct to the farm to do the work, have lengthened the season of operation to a point where they can operate profitably on a bushel charge that is in most cases lower than that charged by the stationary operator. It has been found that when growers become accustomed to this service they are glad to take advantage of it early in the season, as has been proven by the 7 years of operation in the lower Wabash Valley. The portable unit complete weighs about as much as 40 bushels of wheat. It is much more convenient and economical to move the equipment to the seed than to move the seed in to a central point."

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Vol. LXXIV, No. 56

Section 1

September 21, 1939

AGRICULTURAL ADVISORY COUNCIL

The Agricultural Advisory Council yesterday pledged its fullest cooperation to the President and Secretary of Agriculture in meeting the situation created by the outbreak in Europe. The war in Europe will strengthen many farm prices here, they reported, but consumers need have no fear of shortage or runaway prices. Such advances in farm prices as may occur will tend to restore the balance between farm and city prices and help to bring about normal business and employment. The Department of Agriculture, with the full cooperation of the groups represented by this Council, is the medium through which the efforts of the agencies represented here can be most effective. In order to help carry out the objectives of this Council and the Department, we recommend the permanent organization of the Council.

CROP INSURANCE APPLICATIONS

The Federal Crop Insurance Corporation reported yesterday that on September 14 more than 123,298 wheat growers in thirty-one States had completed applications and paid for "all-risk" crop insurance estimated to cover more than 4,508,000 bushels of 1940 Winter wheat. In the first year of the program, covering the 1939 crop, about 170,000 policies were written, including insurance on Spring wheat as well. (New York Times.)

FARM MACHINE DELIVERIES LIMITED

In order to protect themselves against possible sharp advances in raw material and labor costs as a result of the war in Europe several leading farm implement manufacturers have decided to book no business for delivery beyond January 1, 1940, except on the basis of prices in effect at time of delivery, it was learned in Chicago yesterday. This is stated to be the first time since the World War that farm equipment makers have set such a restriction on forward buying. (New York Herald Tribune.)

FARM PRICES

President Roosevelt said yesterday that he believes farm prices still are below parity and need to go higher to give fair returns to producers. The President's letter, replied to Representative Cannon's (Missouri) request that if prices should rise because of war no legislation be enacted limiting the price of wheat or other farm products unless everything else which the farmer had to buy was subjected to similar limitations. (New York Times.)

Close-growing Vegetation One of the new developments on 18,000 farms in erosion-control demonstration areas in the Southwest has been the use of close-growing vegetation for erosion control, according to R. Y. Bailey, chief of the regional agronomy division of the Soil Conservation Service. As a part of the erosion-control program on these 18,000 farms, more than a half-million acres has been planted to erosion-resisting crops and more than a million acres of semi-erosion resisting vegetation, Mr. Bailey reported. While the soil-conserving value of these crops has been of tremendous benefit to the individual farms, the greatest benefit in Mr. Bailey's opinion has been the opportunity which this vast aggregate acreage has afforded to develop a proper conception of a complete, vegetative program. (Jackson, Mississippi News.)

Fertilizer Mixed With Wheat "During the past year trials were made of mixing superphosphate right with the wheat, and the 2 seeded through the wheat-seeding machinery," says W. A. Albrecht, Missouri College of Agriculture in the Missouri Ruralist (September 16). "The mechanical irregularities were less than anticipated, and the improvement in the wheat crop by the fertilizer addition was the same as if it had been drilled with the regular fertilizer attachment of the drill. By the use of the more concentrated phosph te the volume of the fertilizer in comparison to that of the seed will be smaller and the distribution of the fertilizer should be less disturbing to the uniformity of the seeding. Of course, a fertilizer attachment on the drill is less trouble, but mixing fertilizer with the grain gives good results. The deficiency of the soils in phosphate is so pronounced, and the responses from the treatment so regular, that one may well use the fertilizer grain mixture through the grain drill when a drill with fertilizer attachment is not available."

New Kind of Vitamin B Evidence of the possible existence of another kind of vitamin B, the eleventh food factor to be carved out of the original vitamin B by chemical and biological research, has been discovered by Prof. Paul Gyorgy and Robert E. Eckardt of the Western Reserve University School of Medicine in Cleveland, Ohio. Working with rats, they found that there are skin lesions that persist even though the rats are fed a diet containing the known necessary vitamins, including purified natural or synthetic vitamin B₆. Their conclusion reported to the scientific world through the British science journal, Nature, is that "the role played by the vitamin B₂ complex in dermatologic conditions has to be extended beyond B₆." The new factor has not yet been named, but it is suggested that vitamin B₆ should be called pyridoxin, because it is a pyridine derivative containing several methoxy groups, and not adermin, referring to its dermatologic protection, now shown to be not complete. (Science Service, September 18.)

Weather
and Crops

Serious droughty conditions continue in the Great Plains, with another week of generally light rainfall and extremely high temperatures. The unfavorable conditions were further intensified, with more extensive reports of hot winds, rapid depletion of soil moisture, and dust-storms. Some extension eastward of the severe conditions was noted, with much of the Ohio Valley reporting a hot, dry week, with further deterioration of pastures and a shortage of surface-water supplies. Light rainfall was also detrimental in the Northeast and in many southern sections and a good soaking rain is now urgently needed from the Great Plains eastward to the Atlantic coast. Beneficial rains occurred in the Southwest, being moderate to heavy over much of New Mexico and light to locally excessive in Arizona. Showers were helpful in other parts of the West, with drought-relieving rains noted in western Montana and a good general rain in Idaho. Rainfall was still light in the interior portions of the Pacific Northwest, but excessive amounts were again noted in extreme southern California where they caused some damage. In general, outdoor operations proceeded uninterruptedly, especially gathering late crops and haying. However, the soil was too dry in practically all the major agricultural sections for working, although some areas, notably Minnesota and localities elsewhere, had sufficient moisture for this work.

The hot, dry weather promoted rapid drying of the corn crop in all portions of the belt. In the Ohio Valley corn matured rapidly, but too rapid drying was noticed in many parts, damaging the late crop, though practically all is now safe from frost damage; condition deteriorated somewhat due to the unfavorably hot, dry weather. Deterioration of the late crop continued rapidly in Nebraska, with much reported completely dried up before maturing. In South Dakota and Minnesota conditions favored maturity, with the crop practically safe. In Iowa there was further damage to late corn by the heat and drought, with some stations reporting the highest temperatures of record for so late in the season, and maxima of over 100° on 3 days. Practically all the crop is now safe from frost damage, but the rapid maturity has caused late corn to become light and chaffy and silo filling was made difficult by the high winds and dust. The weather was mostly favorable in the eastern Cotton Belt, but the heat and drought were detrimental in the western part.

Record-breaking heat in large central, eastern, and northern areas, and continued dry weather in most Plains States and much of the central valleys were unfavorable for minor crops. Fall seeding is under way in portions of the Northeast, but dry weather has delayed both plowing and seeding in large central and eastern areas. Pastures are short and brown in many States from the Rock Mountains eastward, in the central and southern Rock Mountain States, and in portions of the Northwest. Considerable deterioration occurred during the week, with streams and water holes drying up in many areas and stock water scarce in portions of Oklahoma, Kansas, Wyoming, Missouri, Iowa, Arkansas, and Ohio. Livestock remain in generally fair to good condition with some improvement noted in portions of the Southwest; some shrinkage occurred in portions of the southern Great Plains.

Ragweed. Low ragweed, one of the most evil of American hay-fever plants, is abundant in Japan but apparently in Japan causes no sneezes, Saburo Katsura, Japanese scientist at present a temporary scientific aide in the Department, informs Science Service. Although ragweed has been in Japan for many years, nobody has ever paid much attention to it because it has caused little trouble, Mr. Katsura states. Learning of its ill repute in America, he sent home for some of its flowers and had the pollen tested by an American pollen specialist, Dr. R. P. Wodehouse of Yonkers, N. Y. Dr. Wodehouse reports that the pollen produced typical reaction in sensitive persons. Mr. Katsura states that Japan is a land of no hay-fever. Mr. Katsura has been in correspondence with Japanese physicians, who confirm his statement, and who add that foreigners in Japan are also free of hay-fever.

Tenant Purchase Program. The machine age, commercialized mass production in the field of agriculture, has narrowed the need for farm labor, and has reduced the opportunities to farm boys who normally desire to farm. The Farm Security Administration, to a limited number, offers a solution to this problem through the Tenant Purchase program, by granting to young farmers 40-year, 3 percent loans on family size farms. The time is ample and the interest rate is reasonable, and hundreds of young people are gladly accepting the security of a modest home and food, rather than seasonal high wages and prolonged "lay-offs" in the industrial world. This program provides rural home ownership and relieves the crowded industrial field. Home-produced food eliminates unreasonable distribution costs, home-made improvements relieve the unequal wage scale between farmers and laborers, and home ownership through permanency develops a better community life. Since the natural resources, including the soil, are very definite security, it appears this loan plan is safe and helpful. (Hoosier Farmer.)

Profits from Waste. "Scientific research, through government laboratories, state experiment stations, and private concerns, has made desirable progress," says the Florida Grower (August). "Noteworthy in this respect is development of a growing livestock-feed industry using pulp and rind refuse, formerly a burden to canning plants, as its raw material. Several years' tests in animal nutrition conducted at the state experiment station by Dr. Wayne Neal and his associates proved that citrus livestock feed, when properly applied, is superior to beet-pulp feeds formerly used. Dairymen learned that citrus-pulp feed gives increased yields of superior quality milk, has various health-building mineral contents, and produces glossy animals with all-around good health. As a consequence, a citrus-pulp feed is rapidly replacing Florida's annual importation of beet pulp estimated at 25,000 tons, keeping \$500,000 within the state and reducing the dairyman's feed bill by \$100,000 a year..."

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Vol. LXXIV, No. 57

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HURRICANE SALVAGE

The New York Times, in summarizing the hurricane salvage work in New England, on the first anniversary of the disaster, says in part: "The Emergency Project reports 67 percent of the salvage work and 40 percent of the hazard reduction completed. An administration cost of only 3.9 percent is reported. Of the two and a quarter billion board feet that were blown down one and a quarter billion have been found to be marketable. To date, the Forest Service, has salvaged 600,000,000 board feet, and private interests 383,625,000. The government has entered into 12,172 contracts for purchase of timber, and to date has paid out for it \$6,782,000, plus \$5,064,800 for labor. In 806 receiving sites, 267 of which are ponds, are being delivered each week 7,000,000 board feet, 4,000,000 of which 173 mills, owned or under contract to the government, turn into lumber. Today the salvage work is employing 6,500 men, against a peak in May and June of 18,000. For this alone New England labor and timber-owners have received about \$130,000 weekly since the Northeastern Timber Salvage Administration began operations. Except for the marketing the salvage job is nearly completed...The Forest Service has cleared 7,484 miles of roadways and fire lanes and 115,981 acres of hazardous areas. It now employs about 22,000 men in fire-protection service and during the Spring of the year had nearly 50,000 men in this work...The Forest Service has spent \$300,000 on fire-fighting equipment. It is estimated that two more years at the first year's pace will be required before the fire hazard in New England is reduced to normal."

DAIRY SITUATION

Rising commodity prices, business improvement and a high level of consumption of dairy products are factors indicating improvement in the dairy situation, the Bureau of Agricultural Economics reported Wednesday. Commenting on the dairy situation, the BAE said that the rise in butter prices early this month was not so great as for many agricultural products, and the rise that did occur was to some extent a seasonal gain. (Wall Street Journal.)

COTTON EXPORTS

Sales and deliveries for export of cotton and cotton products from the beginning of the cotton export subsidy program on July 27 through September 18 amounted to 1,895,000 bales, Secretary Wallace announced yesterday. The subsidy amounts to $1\frac{1}{2}$ cents a pound on raw cotton, with equivalent payments on cotton products. The figures cover cotton not yet actually exported but for which definite commitments for sale abroad have been made. (New York Times.)

Better
Hybrids

A. M. Brunson, United States Department of Agriculture Agronomist at Purdue, in an article in the *Prairie Farmer* (September 9) says in part: "One of the outstanding things which has contributed to the success of the corn program through the Corn Belt states has been the fine spirit of cooperation between the workers of the various stations who have traded material freely and have made available superior inbreds to the other stations. In this way much more rapid progress has been made than could possibly have been made by a single station acting alone, and more valuable combinations have been available to the farmers of the several states involved...The Purdue Agricultural Experiment Station, in cooperation with the Bureau of Plant Industry, U. S. Department of Agriculture, has one of the few sweet corn breeding projects in the country. Mr. Glenn M. Smith, who is in charge of this work, developed Golden Cross Bantam sweet corn. This remarkable hybrid combines high quality, productiveness, and freedom from Stewart's disease or wilt which has been the bane of sweet corn producers in many localities. Released at a time when Stewart's disease was present in epidemic proportions, (1932-33) it found an instant acceptance from growers both large and small and is undoubtedly the most widely produced yellow sweet corn today..."

Mulching
Raspberries

"Four years of experimenting with mulching small fruits at the government horticultural station in Maryland has produced interesting results," says the *Oregon Farmer* (September 14). "George M. Darrow, small fruits specialist in the Bureau of Plant Industry, supervised the experiments. Two 400-foot rows of raspberries were mulched with rye straw at the rate of eight tons per acre. Two similar rows were given clean cultivation. The area was not a good berry-growing area, so the experiments are applicable to poor conditions rather than ideal conditions...The mulched rows produced 150 quarts of berries while the cultivated rows produced only 31 quarts...The atmospheric temperature during the year ranged from 9 to 102 degrees. Thus Mr. Darrow concludes that the straw mulch served as insulation, keeping out heat in the summer and holding in warmth in the winter. Mr. Darrow concludes that almost any kind of mulching material such as straw, leaves or even sawdust could be used effectively. It should not be concluded from the experiment in Maryland that mulching in every locality would have similarly beneficial results. The experiment does indicate, however, that under some conditions mulching produces beneficial results."

Coffee Scientific American (October) reports on a new
Plastic plastic made wholly from green coffee beans and which
 requires no additional raw materials. "Coffee-plastic
manufacture will be a highly self-contained industry," says the
article, "because the coffee provides its own chemical plasticizers
and catalysts, and its own filler material. Its by-products, further-
more, are sufficiently valuable in themselves to defray much of the
cost of production. The new coffee plastic can be produced in a
thermo-setting or a thermo-plastic form. It can be produced in
green, red, mahogany, brown, yellow, and ebony black merely by the
chemical development of its own coloring materials, in which the
green coffee bean is unusually rich. (One of its by-product fields
will be that of vegetable dyes and chemical color indicators.) It
can be made in varying degrees of hardness and resiliency according
to the use for which it is intended. It can be molded, drilled,
machined, sawed, and polished, and it can be produced with a wear-
resistance superior to wood, cork, or rubber, and comparable with
the best grade of linoleum...An important by-product of coffee-
plastic manufacture is coffee oil. This oil is rich in chemicals,
contains vitamin D, and is suitable for a cooking oil and as a mix-
ing oil for paints. It contains fertilizer and bacterial-growth
agencies, and can be used in insecticides, medicines, soaps, and
lotions. Other by-products are an emulsifying agent and a chemical
for forming colloids, both valuable to chemists and chemical manu-
facturers. As a source of caffeine, of course, coffee is already
well known. Concerning the cost of manufacture, a bag of coffee
containing 132 pounds, can produce 40 square feet of plastic 1/2
inch thick, and approximately 1.25 gallons of coffee oil. The manu-
facturing process involves no unfamiliar machinery or special hand-
ling."

Health Program Commenting upon conditions among the 60,000
for Migrants California migratory worker families, an article in
 Farm Journal & Farmer's Wife (October) says in part:
"The health program for the migratory workers is considered unique in
the agricultural history of this country. Since 1937, California's
state department of public health has vaccinated 23,701 agricultural
workers against smallpox, given 74,257 typhoid and 1,302 diphtheria
injections. There has been no epidemic of these diseases among
workers. To keep up with the incessantly moving hordes of migrants,
the department recently put its immunization clinics on wheels. Four
station wagons, each with a physician, nurse and various assistants,
regularly visit migratory groups. Cooperating with California's de-
partment of public health is the medical program of the Agricultural

Workers Health and Medical Association, a non-profit corporation of the Farm Security Administration that operates in California and Arizona. During the first 12 months of operation, 31,728 persons were given medical care -- 16,145 in California and 15,583 in Arizona. This organization is also using mobile medical clinics set up in specially designed trailers..."

Unfermented Grape Juice In an article in Fruit Products Journal and American Vinegar Industry (September) Alfred T. Myers and Joseph S. Caldwell, Bureau of Plant Industry, say in part: "The present report deals with the results of an introductory study of the possibilities for producing acceptable unfermented beverage juices from varieties of grapes other than Concord, by a process of combining or blending juices of two, three or more varieties to give a product having the desired character and quality. To the degree in which it was successful, such a study should make the production of grape juice possible in districts in which Concord is not grown, and should tend to increase the consumption of this beverage by offering consumers a choice of a number of acceptable types of juice. The study is preliminary in character for the reason that it deals with results obtained with juices from only two crops, and further study over a number of years so as to evaluate effects due to seasonal conditions is desirable..."

Hay Fever Pollen Hay-fever pollens ride the winds over the Atlantic ocean, but only for a relatively short distance off shore, C. C. Durham, botanist of North Chicago, Illinois, stated after examining vaselined glass slides exposed on a recent trip by plane to Europe and return. Pollens were found at altitudes between 2,000 and 8,000 feet out to 275 miles off shore, the slides indicated. Above 8,000 feet there were practically no pollens over either land or sea. Since the plane did not fly at lower altitudes when far off shore, the possibility still remains that pollens may be present "at the bottom of the air" farther out at sea than the slides showed. (Science Service, September 14.)

Peanut Program A program designed to improve marketing conditions for peanut growers by diverting surplus peanuts of the 1939 crop to the manufacture of oil and by-products was announced recently by the Division of Marketing and Marketing Agreements of the Department. Developed in cooperation with growers and trade representatives, the program is similar to those which were in effect for the 1937 and 1938 crops. The 1939 crop was forecast on September 10 at approximately 647,000 tons. Production in 1938 approximated 655,000 tons. During the five years 1928-32, production averaged approximately 444,000 tons annually. Under the program for diverting surplus peanuts in effect for the 1938 crop, approximately 126,000 tons were crushed for oil. The program for the 1937 crop resulted in approximately 84,000 tons of peanuts being crushed for oil.

DAILY DIGEST

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Section 1

September 25, 1939

FARMERS'

CASH INCOME

The Agricultural Department estimated recently the August cash income of American farmers was 13 per cent greater than that of July. The August total was estimated at \$643,000,000, including \$601,000,000 from farm marketings and \$42,000,000 in Government benefit payments. July's total income was \$570,000,000 and that of August last year \$628,000,000. The department estimated the farm cash income for the January-August period of this year at \$4,594,000,000, compared with \$4,612,000,000 for the like period last year. Government benefit payments for this period totaled \$492,000,000, compared with \$306,000,000 last year. (Associated Press.)

SUCCESS OF STAMP PLAN

"Four months of putting pounds on welfare recipients and dollars in the pockets of farmers and grocers finds the experimental Federal food stamp plan well on the road to success in this city," reports Robert Loftus from Rochester, N.Y. last Saturday. "Delighted grocers have watched their sales soar as some \$850,000 worth of orange and blue food stamps poured into their cash registers since the inception of the plan May 16...Harried welfare authorities hail the Federal Surplus Commodities Corp. food stamp plan as a move that will pay the city dividends in health by permitting undernourished persons on relief to obtain an augmented diet which the already overstrained welfare budget is unable to provide...The success of the food-stamp plan in Rochester and in three other cities will result in the program being extended to other cities in the near future, it is indicated..." (Evening Star.)

WHEAT PLANTED

DESPITE DRYNESS

"Clouds of dust arising from barren fields across Kansas signal the fact that the farmer in Kansas is putting in his Winter wheat crop, despite lack of moisture," says John M. Collins in a report from Hutchinson, Kansas to the New York Times. "...Dry seeding conditions are reported all over the southern half of the Wheat Belt, from the Allegheny to the Rocky Mountains. While practically all land intended for wheat in Kansas is ready for final operation, further east the ground has become so hard that plowing has ceased. Whatever hunch the Kansas farmer may have had about expanding acreage this Fall because of possible war prices for wheat, he evidently intends to remain, at the moment, because of weather conditions, within his acreage allotment as set forth by the Agricultural Adjustment Administration..."

Rescued
Dust Bowl

An editorial in the Duluth News Tribune (September 9) states: "In one of the dustiest sections of the dust bowl, the Oklahoma-Texas Panhandle, conservationists now point to a pleasant and spreading greenness. A farming region which seemed to be blowing away permanently has been recaptured. This is the result of concerted action by national and state authorities, with the expert help of agricultural schools and farm experimental stations. New methods were tried and have worked. Farmers, about to abandon their acres a few years ago, attended classes and then carried out instructions given them. They learned and practised 'contour plowing,' using furrows to hold whatever rain falls and prevent down-hill running off of water. They built terraces to retain moisture and used 'strip planting' to anchor the soil. That is the use of alternate rows of normal grains and soil-gripping plants which prevent the wind from carrying away whole fields of top soil. They also cooperated in tree planting on a large scale. There are now 50,000,000 new trees actually growing in that region, recently so nearly treeless. The trees provide a barrier against the wind and they help to hold moisture."

New Cane
Varieties

An Associated Press report to the New Orleans Press (September 8) states: "Two new sugar cane varieties have been developed at the Louisiana State university experiment station. C. B. Gouax of the experiment station staff said today the new varieties, known as C.P. 29-103 and C.P. 29-120, have been thoroughly tested and may be released for production shortly. Gouax said the varieties produce better in some sections of the Louisiana cane belt than in others but that both are inferior to the principal cane varieties now being widely grown. The new varieties are valuable principally, he asserted, in case any weaknesses develop in varieties now being used..."

Planes
War on
Insects

The airplane has been pressed into other kinds of warfare than that between nations. One form of aerial warfare is directed against destructive insects. In Canada the air express services have been carrying shipments of insect parasites which have been released in British Columbia to fight the pea moth that has destroyed the dry pea industry. In the Okanagan, the codling moth has also come in for a counteract from parasites, the codling moth being destructive in the apple and pear orchards. These insect parasites are gathered from all over the world and the fast delivery which the airplane affords is a major factor in enabling these parasites to reach infected areas while still virulent. The parasite lives only a few days after it reaches maturity. (New York Times.)

Encephalomyelitis in Horses "Inherent differences in resistance to certain types of diseases are known to exist in both animals and plants," says the Journal of Heredity (August). "In plants such differences have been extensively studied and the development of resistant strains has become an effective means for combatting certain plant diseases...In the larger animals, species differences in resistance to certain diseases are well known but few well-authenticated cases of such intra-species differences are known. The article records experience with 221 horses at the United States Range Livestock Experiment Station at Miles City, Montana, in a rather severe epizootic of encephalomyelitis. Of the 221 horses in the stud 31 were either purebred Nonius or the result of crosses of Nonius stallions on the grade Belgian or Thoroughbred mares. Of this group, 18 or 58.1%, developed encephalomyelitis. Among the 190 animals of all other groups only 12, or 6.3 percent of the total, were affected...This difference is highly significant...It would appear that susceptibility to encephalomyelitis virus of the western type responsible for this outbreak is dominant to resistance, for the crossbred progeny from the Nonius stallions appeared about equally as susceptible as did the purebred Nonius of the same age groups...Differential resistance of the type encountered here also might influence the response to treatment with vaccines, though no evidence to this effect now exists..."

Civil Service Examination The United States Civil Service Commission announces an amendment to Announcement 90, assembled. Student Aid, \$1,440, Optional Subjects: 1. Agricultural economics 2. Agronomy 3. Biology 4. Engineering 5. Forestry 6. Horticulture 7. Range management 8. Soils 9. Home economics. Applications must be on file with the Commission not later than the following dates: (a) October 16, 1939, if received from States other than those named in (b) (b) October 19, 1939, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Yield of Cranberries This year the cranberry crop will total approximately 625,000 barrels, a 25 percent increase over last year's short crop and 25 percent under that all-record harvest in 1937. Massachusetts, where cranberries grew wild and were treasured by early colonists, will supply 425,000 barrels. Wisconsin is the second largest cranberry-growing state, accounting this year for 100,000 barrels. New Jersey's crop suffered a setback, due to August's violent coast storm, but estimated that 80,000 barrels were saved. Long Island promises 2,000 barrels of bouncing beauties. Washington and Oregon, only of recent years growing the cranberry, have a commercial crop of some 20,000 barrels this fall. (New York Herald Tribune.)

Congress
Sept. 22

Both Houses met in joint session and heard the President's message requesting revision of the Neutrality Act (H. Doc. 474).

The House received the annual report of the Extension Service for 1938; to Com. on Agriculture.

Both Houses adjourned until Monday, September 25.

(Prepared by the Office of Budget and Finance.)

Sweet Potatoes "Starch-making from sweet potatoes -- Mississippi's in Mississippi thriving new chemurgic industry, operating a great plant at Laurel -- shortly will open its second season under bright circumstances. The mill, which ground up 165,000 bushels of yams and turned out 1,650,000 pounds of starch in 1938, expects to double that output this year. Moreover, the management has under construction a dehydration plant which will be ready for operation by the time the 1940 crop shall have been harvested. With the new facilities at its disposal, the starch mill will be able to run all year and thereby use perhaps a million bushels of sweet potatoes. Dehydration-- the technical term for drying -- solves a problem which always had faced sweet potato growers: how to keep the crop in storage. Heretofore it has been impracticable to put away yams in bin or warehouse as corn or white potatoes are stored. Until the new process was developed, the only way to keep that crop was to can it -- a method too costly for starch-makers. On the other hand, dehydration -- developed and perfected in a laboratory at Gladewater, Texas -- can be utilized to store the crop for human food and livestock-feed, as well as for starch-manufacture. The sweet potato's possibilities as a chemurgic crop are suggested by the circumstance that the United States imports about a half-billion pounds of commercial starch a year, mostly from Java. To meet that demand would require 300 plants turning out as much starch as the Laurel mill produced last year." (San Antonio Express, Sept. 14.)

Turkey
Season

The concluding paragraph of an article, "Expanding the Turkey Season" in the Autumn number of Harvard Business Review, says: "Solution of the production problems of the turkey industry is now close to achievement, but increased efficiency and increased profitability can only come from greater volume. The historic turkey season has been rather thoroughly exploited, so that marketers have turned to the 'non-turkey' seasons as the logical opportunity to expand consumption. On the basis of past success, it seems probable that the nation can and will be convinced that it should enjoy turkey on such unorthodox occasions as July evenings. Can success be achieved? Certainly the experiment, whether successful or not, is of interest to students of marketing problems and those business men who are confronted by similar conditions. If moderation of the turkey seasonal is successful, many industries with less firmly established traditions may be spurred to action."

This issue also contains an interesting article, "The Progress of Cooperatives", wherein the writer, Carl N. Schmalz, reviews a number of recent books on Cooperatives.

DAILY DIGEST

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Section 1

September 26, 1939

WEATHER

FORECASTS

Up-to-the minute weather forecasts, taken right off an early morning weather chart, will be added to the customary coffee, cereal, newspaper and radio breakfasts in Washington and Baltimore beginning Wednesday morning. In both cities the weather man will step to the microphone at breakfast time and describe the latest doings on the weather map--the development and progress of hurricanes, cold waves, droughts, rains, snows, floods--and will give a last-minute forecast of the weather for the day. This is the inauguration of a program of four maps and forecasts a day which will be extended to other sections of the country soon, according to Weather Bureau plans. The Washington broadcast will be at 7:30 a.m. The new program brings into use in morning reports observations collected at 1:30 a.m. (Evening Star.)

EXPORT

DEMAND

FOR HORSES

If Europe's war becomes a war of movement, America's farms and ranches may be scoured again for war horses and pack mules. Buyers for European armies swarmed into American horse and mule markets and into our farming and ranching districts during the World War. Already there are signs of a quickening export demand. A shipment of 1,000 mules for service in Turkey's expanding army recently left New Orleans. Another shipment for Turkey is scheduled for next month from a Texas point and there are reports of still more buying in the Southwest. European horse buyers coming to the United States today would find only 10,800,000 horses and 4,382,000 mules on farms and ranches, as against 21,431,000 horses in 1915. The 1910 figure for mules was 4,239,000. Mechanization on the farm is largely responsible for the decline in total of animals. (A.P.)

SURPLUS

FOOD PLANS

Agriculture Department officials said yesterday they would go ahead with an expanded distribution of surplus food to the Nation's relief families despite an expected increase in European demand for American farm products. By the time war buying showed any sizable increase, officials said, American production could be expected to have expanded sufficiently to meet the extra demand in the case of most crops. The war has caused the Government to change its mind about distributing rice to relief families, however. Cuba and other Western Hemisphere customers which ordinarily buy large quantities in the Orient, turned to the United States for supplies. Consequently the surplus problem has disappeared. At the same time the Department included lard under its food stamp plan, despite a potential sharp increase in European demand. (A.P.)

New Varieties

J. Sidney Cates in an article on new potato marvels of Potatoes in Country Gentleman (October) says in part: "During the past year, as a result of the national program, carried out in co-operation with the different states, there have appeared a number of new potato varieties of sensational interest and importance. One of these, the Sequoia, developed by M. E. Gardner, of North Carolina, has yielded in a five-year test nearly a hundred bushels per acre more than its nearest competitor. It has shown no blight, no mosaic, and is but little affected by insects. Ordinarily, leaf hoppers and flea beetles will usually riddle the leaves of a potato plant before the summer is over. For some strange reason these nefarious bugs keep away from this new seedling, while other varieties alongside suffer heavy damage.....Not only does this new potato head the total yield column but it has shown the highest per cent of U.S. No. 1 grade, and lowest per cent culls of any variety in the Southern tests..."

"The newest released variety put out by the department at Washington is named Sebago, and to my mind it marks the biggest step forward that has yet been made in providing a superior potato for the Northeastern States. This sort is comparatively highly resistant to an attack of late blight.....Another of the new varieties from this extensive breeding program has been named Houma. It is highly resistant to blight and mosaic, an excellent yielder, and has amazingly good cooking qualities. Houma has made a splendid showing in Maine, in North Carolina and in Louisiana. Seed is now available for far more extended trial plantings. The new variety put out last year by Michigan State College, working in cooperation with the department at Washington, is known as the Pontiac. It also carried high disease resistance, and is a heavy yielder, especially on Michigan soil. The next big achievement in overcoming pests by potato breeding is scheduled to be the common potato scab. Some extremely promising scab-resistant material is being developed; and it is hoped that before many more years have gone by, other varieties will be forthcoming that carry high scab resistance...."

Pimientos

In Georgia

The pimiento industry in Georgia--growing and canning the Spanish sweet pepper--has developed into a nation-wide business, says Atlanta Constitution (9-17-39). It provides that bright, attractive coloring and delicate flavor so extensively sought as a garnish for many delectable dishes. Prior to 1914 pimientos, where known at all, were used in extremely limited quantities in the United States. They were grown principally in Spain and canned by hand. This limited output was fully ample to meet the demands. Practically all the pimientos consumed in the United States came from Spain. When imports from Spain became difficult and expensive during and following the World War, a search was made in the United States for a climate and soil suitable to growing the peppers. Fortunately for the state, the country in the vicinity of Griffin, Ga., was found to be practically the same as that portion of Spain where the peppers were grown. So, gradually, the pimiento industry of the state has developed into a business

of no mean proportions, providing employment for hundreds of men and women, and amply able to care for the nation's demands. Georgia pimientos are grown and canned under the constant supervision of those with expert knowledge of its peculiar characteristics. The Georgia Experiment station, as in many other instances, contributes its valuable services in the selection of seed and in the development of flavor, coloring and all around good quality. Pimientos are no longer regarded strictly as a delicacy, but are now looked upon more in the nature of a necessary food commodity. They are rich in vitamins A and C.

Foreclosures on Farms

An announcement by F.F. Hill, governor of the Farm Credit Administration, calls attention to the fact that even in years of general bumper crops there are areas in the United States where local conditions cause crop failures and where the financing of farm mortgages remains a pressing problem. Mr. Hill has asked the twelve Federal Land Banks to make a study of farm foreclosures and, pending this study, to limit foreclosure actions to cases of property abandonment, bad faith or actions to quiet title. His announcement points out, however, that farm foreclosures have steadily declined during the past few years and now are at the lowest point in 13 years. Two factors enter into this decrease in foreclosures. Most important is the fact that virtually all distressed properties have been refinanced on a sounder basis, or already have been lost through foreclosure. The second is the policy of the Farm Credit Administration and other lenders to avoid foreclosure as long as there is a reasonable chance for the borrower to work out his problem. (St. Paul Pioneer Press, September 15.)

History of American Agriculture

"Those who are interested in the history of American Agriculture should not fail to add to their library the volume recently published by the oldest agricultural organization in America, the Philadelphia Society for Promoting Agriculture, formed in 1785," says an editorial in Pennsylvania Farmer (September 23). "This volume goes back to the beginning of the real study of agriculture in this country. The pioneers who formed the Society have left records which will surprise those who read them. For instance they reported on pasture improvement, which is generally regarded as a comparatively recent activity. They advocated and tried to provide for education in veterinary medicine. They introduced the use of lime, clover and alfalfa. George Washington, Benjamin Franklin and many other prominent men were members...."

H. A. Allard of the Bureau of Plant Industry has written an interesting article on "Virginia's Insect Musicians" which appears in the September issue of The Commonwealth.

Advertising by Large-scale co-operatives engaged in merchandising farm products report expenditures averaging 1.7% of their net sales f.o.b. shipping point for advertising in their products, according to figures on advertising expenditures collected by the Farm Credit Administration in a study of the principal large-scale associations known to be advertising extensively. "Dried fruits, vegetables, and nuts were advertised by co-ops with expenditures ranging from \$29,000 to \$319,000; canning associations' expenditures ranged from \$4,000 to \$160,000; and the co-operatives handling fresh fruits and vegetables reported expenditures ranging from \$400 to \$1,300,000," the report states. "Studies made by the Division indicate that advertising is used most effectively by co-operatives where the following conditions exist: (1) A good product which includes standardized grades and packs, adequate inspection to enforce grading rules, and brand identification; (2) Proper distribution and pricing, including avoidance of market gluts or famines, sound pricing policy, trade co-operation which maintains fair margins, and availability of the product in an adequate number of retail outlets; (3) A strong co-operative controlling a major share of the product, thereby making possible effective coordination of sales and advertising, continuity of policy, low unit costs of advertising and selling, and dealer service to insure adequate point-of-sale display and promotion and proper dealer margins." (Editor & Publisher, Sept. 16).

Drought-resistant Weeds H. E. Babcock, writing in American Agriculturist, (Sept. 16) says: "As the drought has progressed, I have wished I were more of a botanist so that I might know the names of certain weeds which seem to be resisting it especially well. It seems to me that the plant breeders of the United States might well consider starting out with some of the proven drought resistant weeds and seeing if they can't breed an edible plant which will grow well in dry weather."

Farm-fitting Tractors "The biggest 'break' Southern agriculture has had in many years came recently with the advent of the small or family-size tractor," says J. E. Stanford in Southern Agriculturist (October). "The light, small-type tractor, models of which have been demonstrated in the last few weeks by several leading machinery manufacturers, is a farm-fitting machine, so far as the South is concerned. It meets a long felt need and often expressed desire for a tractor that would economically meet the requirements of hundreds of thousands of medium-size farms throughout the Southern states....However, it is believed that there will continue to be a yearly increase in purchase of the heavier-type tractors in the South, because an ever increasing number of farmers are learning that they can be utilized advantageously and profitably in a number of every-day farming operations outside of breaking and cultivating the land...."

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Section 1

September 27, 1939

FSCC AID
TO APPLE
EXPORTERS

The Federal Surplus Commodities Corporation, acting on reports that the European war had robbed United States apple producers of a large foreign market, undertook yesterday to take a large part of the exportable surplus out of regular domestic trade channels. At conferences with Senator Schwollenbach and Representative Hill of Washington, and Irven King, master of the Washington State Grange, Milo Perkins, corporation chief, outlined a series of investigations that would pave the way for a large purchase program. Schwollenbach said after the meeting that Perkins had pledged the resources of his organization to meeting the crisis, which, unless averted, would financially ruin many apple growers. (Washington Post.)

SLATTERY
HEADS REA

Harry Slattery, appointed Administrator of the Rural Electrification Administration by Presidential Order on September 4, yesterday took the oath of office at the REA headquarters. Mr. Slattery succeeds John M. Carmody who resigned the office to become Administrator of the recently formed Public Works Agency. The REA, previously an independent agency, became a part of the U.S. Department of Agriculture under Reorganization Plan II. Since the resignation of Mr. Carmody, the REA has functioned under the leadership of Robert B. Craig, acting administrator, and under the general direction and supervision of Secretary Wallace.

TOBACCO
REFERENDUM

Secretary Wallace recently set October 5 as the date of the referendum in which farmers will vote on flue-cured tobacco marketing quotas for the 1940 crop. For the quotas to be put into effect, at least two-thirds of the producers must vote favorably. The Secretary has proclaimed a national flue-cured marketing quota of 618,000,000 pounds plus the amounts required for increases for small producers, which will make a total quota of about 660,000,000 pounds. Decision to hold a quota referendum was made at a conference on September 13, when it was indicated that flue-cured markets, which had been closed after the withdrawal of British tobacco buyers, would reopen a few days after the referendum. (Wall Street Journal.)

Portable
Dipping Tank "Dipping sheep is a relatively expensive practice for the small flock owner, when he must build costly stationary vats, chutes and corrals for the process," says the Country Gentleman, (October). "So the agricultural engineering department of the Missouri College of Agriculture has devised portable equipment which can be owned co-operatively by a large group of farmers and moved from farm to farm for the dipping. Portable equipment, with only a small investment per farmer, gives small flock owners all the advantages of dipping at a very low cost per sheep. The total cost of the equipment varies from \$160 to \$180. A 150-gallon tank, or larger, is attached to the chassis of a discarded automobile to form a trailer. Two enclosed sloping runways, for entering and leaving the tank, are so constructed that they can be put up and taken down quickly and easily. A platform containing a trap door for lowering the sheep into the solution completes the equipment...."

Agriculture's
1940 Yearbook "Farmers in a Changing World" will be the theme of the 1940 yearbook of the United States Department of Agriculture, the yearbook committee has announced. The tentative title for the 1941 yearbook is "Climate and Man." Each of the recent yearbooks has dealt with a single broad field of research and action of major importance in the work of the Department. They have consisted of separate contributions on a central theme, which can be absorbed piecemeal by the reader. The 1940 yearbook, like those in years past, will be for two classes of readers--the intelligent farmer with a practical background but in most cases little theoretical knowledge, and students, teachers, and scientific workers in need of more technical information than the first group. The effects of a "changing world", upon the economic and social problems of the farmers will be presented in the 1940 yearbook. Adaptation of the farmer to these changes through conservation, adjusting production and demand, solving problems in the agricultural marketing field, and in the fields of credit, insurance, taxation are subjects which have been assigned for an unbiased discussion, giving full consideration to alternative solutions and opposing viewpoints. The 1939 yearbook, Food and Life, a study of food needs for both man and animals, is now in the printer's hands. Copies should be ready in the early fall, says Mr. Hambidge, yearbook editor.

Cosmetic
Labels Many manufacturers of cosmetics are still including in the labels of their products claims that have been outlawed by the new Food, Drug, and Cosmetic Act a survey shows. The Federal Food and Drug Administration has warned these manufacturers that they must rectify their labels to bring them within the law. The Administration's warning does not attempt to include all the phrases that have come under the ban, but it has issued a list of more than a score of phrases that are unwarranted and that will be regarded as false and misleading if used in labels.

Corn Pickers In the September issue of the Agricultural Situation, A. P. Brodell, in a discussion of the advantages and disadvantages of corn pickers says in part: "Corn pickers vary widely as to effectiveness in different years and at different times in the harvest season. The picker method is usually at its greatest advantage in the early part of the harvest season before storm damage becomes excessive. But studies show that, even with favorable conditions, the corn picker leaves more corn in the field than do hand huskers. In years of heavy storm damage the quantity of corn left in the field is sometimes so large it becomes necessary to discontinue harvesting with the picker. The corn picker is relatively at its greatest advantage where fields are large, the production is greater than can be harvested with the usual farm labor, and where the corn left in the field can be utilized by livestock without the necessity of expending extra labor for gathering it. The cost per acre for operating a picker is influenced considerably by the number of acres harvested each year, by wage rates, and by corn yields. The one-row picker, to be operated at a fairly reasonable figure, should harvest 80 to 100 acres annually. From 160 to 200 acres are needed for the two-row picker...The rate paid hired labor for husking corn also varied significantly, largely reflecting differences in wage rates and corn yields. The picking rate, however, averaged around 4.5 cents per bushel in the principal corn States in 1938. In most States the 1938 yield of corn per acre together with the rate paid per bushel for husking by hand, gives a per-acre figure fairly close to the custom picker rate.

There are, however, other aspects to be considered. When the farmer hires a picker he usually hauls and cribs the corn. When he hires the work done by hand husking he furnishes teams, wagons, and often boards the harvest hand but the harvest labor hauls and cribs the corn. The large corn picker sales of recent years indicate that the corn picker will be of increased importance as a factor in corn harvest in the years ahead. Its use, however, will likely be limited mostly to areas of the Corn Belt where the bulk of the crop is harvested from the standing stalk....."

Poisonous Plants F. J. Keilholz, Extension Editor at the University of Idaho, in Country Gentleman, (October) says: "Poisonous plants cost farmers of the United States an estimated fifteen million dollars a year in livestock losses, with casualties highest in dry season such as occur in the late summer months. John J. Pieper, of the Department of Agronomy, University of Illinois, reports twenty-five or thirty of these plants for that state alone and says that the average farm may have a half dozen without the owner or operator being aware of the danger from them. Sudden or unexplained death of an animal may trace to one of these poisonous plants. Sometimes whole herds are involved. Two things are recommended by the division of animal pathology at the University of Illinois for farmers who wish to avoid livestock losses from poisonous plants. First, they should become acquainted with the worst plants and remove them from the grazing areas. Second, they should consult a competent veterinarian when animals are sick or have died suddenly."

Congress
Sept. 25

The SENATE adjourned until Thursday, September 28,
immediately after convening.

In the HOUSE, Mr. Cannon of Mo. criticized the opposition to recent food-price increases, claiming that farm prices have not yet reached parity, but demanded legislation to enable the farmer to receive the benefit of such increases. (pp. 22-7.) Agreed to meet only on Mondays and Thursdays until Oct. 9. Mr. Rayburn announced that no legislation will be considered during this period. (pp. 19-20.) (Prepared by the Office of Budget and Finance.)

Boron in
Soils

American Fertilizer (September 16) contains the following abstract of a paper by W. O. Robinson, Richard R. Whetstone, and Horace G. Byers of the Bureau of Agricultural Chemistry & Engineering, presented at a Meeting of the Division of Fertilizer Chemistry at Boston in September: "The fact that there is a very narrow margin between the relatively minute quantities of boron that are necessary for plant growth and the quantities that are toxic makes the accurate determination of boron in soils and plants a problem of major importance. Two methods of soil analysis for boron are described. Digestion with strong phosphoric acid and separation of the methyl borate by distillation are comparatively easily carried out and seem to represent the maximum available boron in soils. Fusion of the soil with acid sodium phosphate and separation of the boron as methyl borate appears to give the total boron. The analysis of 93 soil samples representing 27 soil profiles of various members of the great soil groups shows that the Desert, Chernozem, and Prairie soils are usually high in boron and that the soils of the coastal plains and the Podzol soils are low. Further work may show a modification of this generalization, due to uneven distribution of boron in the parent geological formations. Soils vary greatly in the differences between the total and the acid-soluble boron. There is considerable evidence to show that this difference represents primary minerals, tourmaline in particular, in the parent rock, although the evidence presented does not exclude the formation of acid insoluble secondary compounds."

Economic
Effects of
Hybrid Corn

"Economists of the Minnesota College of Agriculture have recently published results of their study of the 'Economic Aspects of Hybrid Corn,'" says an editorial in The Farmer (September 23.) "For the 12 Corn Belt States, they estimate that .4 of 1% of the total corn acreage in the 12 states was devoted to hybrid in 1934. This increased to .9 of 1% in 1935, to 2.5% in 1936, to 9% in 1937 and 31% in 1938. As to the future rate of increase in the Corn Belt, the report says, 'Opinions are that hybrid corn will be grown on 75 to 95% of the corn acreage in 8 of the 12 states and that in the case of 3 others the percentage may be 50 to 60. Estimates as to the time when these totals will be reached vary from 1939 to 1948.' Because hybrid corn is expected to yield approximately 20% more per acre than open-pollinated corn, the acreage increase in prospect will have certain very definite effects upon agriculture...."

DAILY DIGEST

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Section 1

September 28, 1939

DROUGHT

CONDITIONS

Agriculture Department officials expressed concern yesterday over severe drought conditions which have developed in the heart of the Nation's farm belt and have caused unprecedented delay in seeding the important winter wheat crop. Likewise, many livestock farmers, confronted with burned pastures and a shortage of feed and water supplies, are being forced to sacrifice meat animals unfattened. Milk supplies in some sections have been curtailed. N. E. Dodd, director of the Agriculture Adjustment Administration's Western division, reported upon his return from an inspection tour of the Great Plains, Rocky Mountains and Pacific Northwest that planting of winter wheat was "farther behind than ever known". Dodd emphasized, however, that there was no danger of a shortage in wheat. He said that should the 1940 crop be unusually small, present surpluses would make up the deficiency. Likewise, the Nation has large supplies of livestock feed crops. (Associated Press.)

DECLINE IN

UNEMPLOYMENT

A 4.3 percent decline during August brought national unemployment to the lowest point since December, 1937, according to statistics made public yesterday by the National Industrial Conference Board. The number of jobless persons dropped from 9,852,000 in July to 9,424,000 last month, a reduction of 428,000. Total employment in the United States rose from a July figure of 44,782,000 to 45,263,000 in August. Agriculture and manufacturing showed the greatest advances, with more than 200,000 additional employees recorded in each field. The government's emergency labor force declined to 2,169,000 workers, a drop of 16.6 percent from July. This was the sixth consecutive monthly cut in the emergency work force, and brought the total to the lowest point in twenty months. (New York Times.)

HIDES AND

LEATHER

PRICES

Sharp price increases in hides and leather since the outbreak of war in Europe were noted yesterday in Boston markets. The price of hides since September 1 was increased between 45 and 50 percent and leather has advanced approximately 20 percent. These increases were attributed largely to the fact that about 20 percent of the hides used in this country are imported and that the future availability of foreign sources remained in doubt. (Associated Press.)

Wheat World wheat supplies for the year beginning July 1,
Supply 1939, are now indicated to be about 5,464 million bushels,
 or about 275 million bushels more than in 1938-39, it
was reported ~~Munday~~ by the Bureau of Agricultural Economics. Figures
are exclusive of Soviet Russia and China. Increases in carry-over
stocks July 1, 1939 more than offset the decrease in production. World
stocks of old wheat on July 1 were estimated at about 1,200 million
bushels, or about 600 million bushels more than a year earlier. Wheat
supplies in the United States for the year beginning July 1, 1939 are
estimated at 990 million bushels, or about 100 million bushels less
than in 1938-39. Domestic disappearance for the year beginning July 1,
1939, is forecast at about 695 million bushels. Deducting this from
the estimated supply leaves 295 million bushels for export or carry-
over. Wheat supplies in the United States at 990 million bushels are
about the same as in 1914. World wheat supplies of 5.5 billion bushels
are considerably larger than in 1914 when they totaled 3.5 billion
bushels. Compared with world shipments of about 600 million bushels
in 1938-39, world shipments in 1914-15 were 556 million bushels. The
world rye crop in 1939 will again be large. To date reports for only
15 countries have been received, which in 1938 represented about 45
percent of the total world production. Production in these 15 countries
is estimated at 480 million bushels, compared with 469 million bushels
in 1938.

Disease- "A program for the production of disease-resisting
Resisting corn hybrids adapted to Ohio growing conditions is being
Hybrids conducted by the Ohio Agricultural Experiment Station
 and the Bureau of Plant Industry, U.S.D.A. cooperating,"
says the Ohio Farmer (September 23). "Several diseases are receiving
particular attention at this time. Among these are Stewart's bacterial
disease (baterial wilt), stalk rot and the common smut of corn. The
corn disease improvement program for Ohio includes detailed observation
and study of old and promising new hybrids in comparison with open-
pollinated corn grown in cooperative plantings and fields in repre-
sentative areas of the state, extensive testing of both new and old
inbreds and hybrids by means of artificial inoculation with the disease-
producing organisms, and a study of the interrelation of climate, soil
and disease, with the purpose of producing new adapted hybrid corns
more resistant to disease than those now commonly grown. A program of
this nature necessarily extends over a period of several years in order
that many inbreds and hybrids may be adequately observed and tested
over a wide range of climatic, soil and disease conditions. Hence, the
production of new hybrids, each more resistant to disease than those
now grown and which are also superior from an agronomic viewpoint,
cannot be expected immediately."

**Weather
and Crops**

The severe drought that has prevailed in midwestern sections for the past several weeks continued unrelieved and was becoming slightly more widespread, with extension of unfavorable conditions into the Ohio Valley and adjacent sections to the eastward and southward. In some localities, principally in Missouri, this is the fourth dry week, while at Springfield, Ill., 34 days have passed without measurable rain, which is the longest such period on record. Stock water is badly depleted throughout this area, with many farmers hauling water, while in western Oklahoma the water table is locally reported the lowest ever known. General rains are needed in most Atlantic Coast States from New England to northern Georgia, with some deterioration of late crops noted.

Although the weather has been abnormally dry in the main agricultural sections for the past 4 or 5 weeks, harvesting operations were greatly benefited by these conditions, with all crops that were not dried up being gathered with practically no spoilage by rain. Conditions were somewhat better in much of the Rocky Mountain region and The Great Basin of the West, although showers in this area were scattered and more rain would be helpful generally. Harvesting operations throughout this area progressed favorably, and wherever there was sufficient soil moisture good advance of late crops was made.

In the Southwest the unseasonable heat wave was broken on the 24th by scattered light rains and thunderstorms and the movement inland of a tropical disturbance over the southern Pacific coast. The latter storm brought excessive rains in southern California, but it was too recent for complete reports on any damage. The excessive heat in this State damaged crops in many portions, with an excessive number of forest fires, although the area burned was not great.

**Crazy-Chick
Disease**

Harry W. Titus, National Agricultural Research
Center reports to the Country Gentleman (October):

"Nutritional encephalomalacia, or 'crazy-chick disease,' has been conquered at last by research in which the team of A. M. Pappenheimer, M. Goettsch and E. Jungherr, of Columbia University and the Storrs Experiment Station, played an outstanding part. This disease appears suddenly at any age between two and four weeks -- it may occur as late as eight weeks -- and frequently causes heavy losses. Its popular name describes its symptoms: the chicks act crazily. When they attempt to walk, they often fall forward or backward or on one side and then wheel in circles. In advanced cases there frequently is complete prostration with the legs extended, the head sometimes retracted, and tremors of both head and legs. Preventing the disease is quite simple: all that is necessary is to include in the diet a small quantity of vegetable oil, such as corn oil, cottonseed oil, peanut oil or soybean oil. According to Pappenheimer and his two associates, as well as other research workers, the effective substance in vegetable

oils is alpha-topcopherol, or vitamin E. This substance, that prepared from natural sources and that made synthetically, is now available in pure form. A rather complete description of "crazy-chick disease" and of other diseases that have similar symptoms is given in Bulletin 229 of the Storrs Agricultural Experiment Station (Connecticut).

Spraying "The dropping of apples before they are full
Apple Trees mature has long annoyed growers," says the Florists
 Exchange and Horticultural Trade World (September 23.)

"Experimental spraying with growth promoting substances in solution, particularly naphthalene compounds, at the U.S. Horticultural Station, Beltsville, Md., have shown that treated trees dropped only 1.5 per cent of their fruit compared with 64 to 90 percent on untreated trees. The cause of fruit drop unduly early is abscission between fruit stalk and branch to which it is attached; a similar condition causes trees to drop their leaves in the Fall. Spraying with growth promoting chemical solutions .00025 percent, arrests such severence and enables the fruit to hang on until truly ready for picking."

Rust Rust fungi, among the worst parasitic enemies of
Fungi wheat and other grains, may possibly give their host
 plants something in exchange for what they take. Dr.

Branquinho d'Oliveira, of the National Agronomic Station in Libson, Portugal, reports in the British journal, Nature, the results of experiments suggesting that rusts can capture and fix nitrogen from the air, as do the bacteria that live in the roots of plants of the pea and clover family. Dr. d'Oliveira grew wheat seedlings on laboratory media from which all nitrogen had been carefully excluded, so that the customary supply of this vitally necessary element could not be obtained through the roots. Then he inoculated part of the plants with spores of various species of rust. After a time he analyzed the plants. The infected ones proved to have a slightly but definitely larger nitrogen content than the control plants that had grown up free from rust. (Science Service.)

"Wool" American corn fields potentially can produce fibers
from Corn with wool-like properties, it appears from research re-
 ported by L. C. Swallen, chemist of a refining company
in Argo, Illinois. From a bushel of corn a pound of zein, a byproduct of corn processing, can be obtained. Zein is a protein with uses, in many cases, like those of casein derived from cow's milk. Zein can be made into plastics, into water-proof wrappers, quick drying printing inks and into films and fibers. (Science Service.)

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Section 1

September 29, 1939

USE OF COTTON

An increase in domestic cotton consumption to something between the 6,860,000 bales consumed in the 1938-39 season and the record consumption of nearly 8,000,000 bales in 1936-37 was indicated yesterday by the Department of Agriculture. The increase, according to the Bureau of Agricultural Economics, depends on continuing improvement of general business conditions, with an upward trend in wages, employment and the general price level over the next two years. A reduction of imports of cotton textiles and fabrics made from other fibers and a possible increased export of cotton textiles might possibly raise the next year's domestic utilization to the 8,000,000 bale record, the statement added. However, any decrease in the competition of British textiles, it was stated, is likely to be more or less offset by increased exports from Japan and Italy. (New York Times.)

DROUGHT AID

The House held a session of only twenty-five minutes yesterday, most of the time being consumed by a speech by Representative Rankin, Democrat of Mississippi, asking Congress to grant \$20,000,000 for relief of drought sufferers in Alabama, Mississippi and Tennessee. He introduced a bill to this end. (New York Times.)

SUPPLY OF DRY BEANS

Agriculture Department economists assured American housewives recently that the supply of dry beans--one of the major staples of their dinner tables--was "more than ample" to meet the Nation's needs. Prices, they said, should not be much higher than during the past year. J. E. Barr, department economist, said the supply of dry beans for the marketing year which opened September 1 included an indicated crop of 13,073,000 bags of 100 pounds each and a record surplus of between 2,500,000 and 3,000,000 bags from previous years. Thus, a supply of between 15,573,000 and 16,073,000 bags was in prospect to meet a total domestic demand--including beans used for seed as well as human consumption--of between 13,000,000 and 14,000,000 bags. (Associated Press.)

Marketing An editorial in Prairie Farmer (September 9) says in Farm Products part: "Orderly marketing has been a goal of farm marketing leaders during the past 30 years. It has been opposed tooth and nail by speculators. The battle has been continuous. Whenever orderly marketing has gained, the fight by the speculators has been more intense...The AAA law encompasses most of the factors which farmers have felt through the past years of fighting for orderly marketing, are necessary if any progress is made. Control of acreage by a central power, loans on corn sealed and kept off the market until needed, opportunity to vote for or against establishing a marketing quota, and finally this extension of storage capacity, all are becoming realities. Results may be small and inadequate, but taking them for what they appear to be, in the face of a bumper corn crop in the real surplus corn-producing sections of the country, all forces united have worked toward maintaining a price. The price is too low -- yet given time, it is entirely likely that in future years of operation, the adjustments between acreage, yields, hold-over, demand, loan rate, may be such that the price of corn will more nearly approximate the cost of producing it. Looking back over the years, we are much encouraged."

Weather Probably 15,000 radiosondes -- little mechanisms
Forecasting that combine a weather observatory with a radio trans-
Instruments mitting station, all weighing a few ounces -- will float
 aloft buoyed upward into the stratosphere by small rubber
balloons in order that weather forecasting may be made more accurate
this year -- second year of their use. These gadgets are routine equip-
ment at some 40 aerological sounding stations of the Weather Bureau,
Navy Department and Coast Guard. They measure barometric pressure,
temperature, and humidity -- translating their observations into radio
signals received on the ground -- to provide more information for weather
men. They climb to heights three to four times those reachable by air-
plane -- they can do their jobs in almost any kind of weather. (Science
Service.)

Freezing Foods "There's something about this frozen food business that appeals to the epicures," says the National Livestock Produce (September). "They like the idea of having their food served at the very peak of perfection and the optimum of ripeness, quality and flavor. The best way to trap all these qualities in any food, is to freeze it at the proper time. Some leading frozen food purveyors are doing just that. Meat producers are watching the results with renewed interest as these connoisseurs in the frozen food business are already dictating production and handling methods in order to insure the uniformity and quality of product which appeals to their discriminating customers."

Avocado Experiment "An experiment that will prove invaluable to all avocado growers is now being conducted under the direction of Dr. Robert W. Hodgson, acting dean of the College of Agriculture, at the University of California at Los Angeles....From their findings on the first phase of the experiment, the scientist has proved that: Large seeds very definitely produce large seedlings, and small seeds produce small seedlings. There is no question but that large seedlings produce large nursery trees. Fall budding produces larger and more uniform nursery trees in this coastal region than spring budding. By the time the experiment is complete, about ten years from now, the University will have the complete life history of several hundred avocado trees used in the experiment -- from parentage and weighing of the seeds to maturity. If the conclusions above follow in the orchard trees, growers will know how to produce uniformly large trees -- with bigger and better fruit -- in the least possible time." (Pacific Rural Press)

Protecting Legumes Stray stacks which have been retained rather than burned by farmers can now be used to protect and increase yields of winter legumes, such as crimson and hop clover, according to H. F. Wallace, district conservationist of the Soil Conservation Service in the Madison county district near Canton, Mississippi. After being cultivated during the summer, many fields that produced crops of crimson or hop clover and were harvested for seed last spring have reseeded to clover from the spring crop. Mulching these fields with straw or old hay will help to conserve moisture and protect the young clover seedlings from the hot sun. (Jackson, Miss., News)

Refrigerated Lockers Use of cold storage locker systems may increase consumption of meats on farms, A. A. Dowell, professor of agricultural economics at University Farm, Minnesota, asserted recently. Speaking at the opening session of a three-day short course on refrigerated lockers at the Farm, Prof. Dowell hailed the locker development as having "brought about the first significant change in modern times in farm processing and storage of meats." The locker plan, he said, "enables the farmer to slaughter or to buy at wholesale, from others at any time during the year and to preserve meat in a fresh frozen state. Thus far," he added, "the movement is largely confined to farm families. If it spreads generally, it will be due to possible cost saving and to a lesser extent to the possibility of obtaining a grade of meat more suitable to the pocketbook and taste of consumers."

Nebraska's "The Nebraska noxious weed-control program, based
Program for upon education, district organization, and prevention,
Weed Control is getting results," says George S. Round, Extension
Editor, University of Nebraska College of Agriculture,
in The Reclamation Era, (September). "It is through such a well-
rounded program that farm and city people are recognizing the dangers
of weeds and becoming vividly aware of the need to do something about
it. The problem is being combated by a well-established educational
program, by the organization of corporate noxious-weed-eradication-
districts; by encouraging the eradication of noxious weeds, using
approved methods; by prevention of new infested areas through control
of infested seed and livestock feed; and by precaution in the use of
crop-harvesting machinery...A survey conducted by the department of
agriculture and inspection shows 303 bind-weed-infested areas were
mapped on 85 farms in the district for a total of about 70 acres. In
1938 the district supervisors urged all landowners to eradicate as much
as possible, but no eradication assessment was made on anyone.

So successful was the work that the supervisors thought it again
unnecessary to make any eradication assessments in 1939. Out of the
303 infested areas, a total of 251 were treated last year, which shows
the progress being made under the organization plan. The extensive
work carried on last year was probably somewhat encouraged by the
demonstrational weed-control plots of the State department of agricul-
ture and inspection, the Nebraska College of Agriculture and the U.S.
Department of Agriculture...."

Shortage The shortage of hay in some states is causing
of Hay dairy farmers, their leaders, and professors in agri-
cultural colleges to urge the disposal of low producing
cows and cows in poor health or suffering from mastitis, Bang's
disease, shy breeders, etc. If everyone would consider the cow as a
market and would make inquiry as to what each one is paying for feed
consumed, it would not be long before no cow could purchase any feed
unless her owner was assured that she would pay for it. A shortage
of hay increases the feed expense of the dairy farmer, but the poor
cow sinks him. (Hoard's Dairyman, September 25).

Drying A new process for the drying of egg whites, re-
Egg Whites quiring only about a third as much time as the old
fermentation method, has been developed by chemists
of the U. S. Department of Agriculture. In the old method a bacterial
growth resulted, while in the new process few if any bacteria develop
and a superior product more nearly resembling fresh egg whites is
made. (Everybody's Poultry Magazine, October.)

